Wisconsin Strategic Highway Safety Plan 2006 - 2008

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October 18, 2006

Dear Colleague:

I am pleased to present Wisconsin's Strategic Highway Safety Plan for 2006-2008. The document provides background and information about highway safety in Wisconsin and lays out strategies for the Wisconsin Department of Transportation (WisDOT) and its many safety partners to address key safety issues.

WisDOT's mission is to *provide leadership in the development of a safe and efficient transportation system*. Even with our long history of increasing safety, more than 800 people died and another 53,000 were injured on Wisconsin roads last year. Clearly, the challenge for all highway safety partners in the state is to reduce these numbers significantly and to establish long-term strategies to improve highway safety.

Partnership is a key component in achieving safety improvements. Coordination of safety efforts at federal, state and local levels will enable us to reach state goals, maximize program resources and meet common objectives. Private businesses, community groups and individual citizens also play key roles in spreading the word about safety issues and in acting to address them.

This plan is a product of WisDOT's Traffic Safety Council, a multi-disciplinary team that works with a wide range of safety professionals and advocates. The document provides background and information about highway safety in Wisconsin and lays out strategies to address key concerns.

Thank you for all that you are doing to promote highway safety in Wisconsin. As we implement this Strategic Highway Safety Plan, we will continue to lead the way in providing a safe transportation network for all of our citizens.

Frank J. Busalacchi
Secretary

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Introduction

Wisconsin has one of the best highway safety records in the United States, with a motor vehicle fatality rate consistently below the national average (see Figure 1, page 5). Despite this, many people are killed or injured every year on Wisconsin's roadways; preliminary data indicate 801 people were killed in 2005 and another 53,441 were injured. The Wisconsin Department of Transportation (WisDOT) and its safety partners are challenged with continuing to lower these numbers and improve overall highway safety.

This Strategic Highway Safety Plan describes Wisconsin's most critical highway safety issues and outlines a plan to significantly reduce fatalities and serious injuries on all public roads. The strategies and performance measures described in this plan support the plan's overall strategic goal:

By 2008, reduce traffic fatalities, injuries and crashes on Wisconsin roadways by 5% from the 2001-2005 average.

This plan is divided into four sections:

Part 1: Background – Data on highway safety in Wisconsin, including fatality rate as compared to the U.S. average, data on crashes by highway system, and trends in fatalities and injuries.

Part 2: Issue Areas – Strategies to address Wisconsin's top 10 highway safety issues, including implemented strategies from 2001-2005.

Part 3: Continuing Safety Issue Areas – Our progress and activities in 16 other significant highway safety issue areas.

Appendices – A list of safety partners and the issue areas they address; a copy of the environmental scan document used by the Traffic Safety Council in establishing priorities for the plan; and a list of acronyms used in the report.

Bringing Safety Partners Together

An important function of the Strategic Highway Safety Plan is to coordinate statewide goals and safety programs to most effectively meet common objectives. The plan will help Wisconsin's safety partners better leverage their limited resources and work together to achieve common safety goals. This plan aims to encompass state, regional and local plans, including:

- 2006 Wisconsin Integrated Highway Safety Performance Plan;
- 2006–2009 Wisconsin Traffic Safety Information Systems Strategic Plan;
- 2006 Highway Safety Improvement Program; and
- 2006 MCSAP Commercial Vehicle Safety Plan.

Strategies and activities from this plan will be shared with other state and local plans, including: the State Long Range Transportation Plan; the Metropolitan Planning Organization Long Range Plans; and the Highway Safety Improvement Program Management Manual Plan.

This second edition of the Strategic Highway Safety Plan was developed by WisDOT's Traffic Safety Council, a group of WisDOT employees whose members work cooperatively with safety professionals and advocates at all levels of state and local government. Traffic Safety Council members' discussions with these groups informed their work in developing this 2006-2008 Strategic Highway Safety Plan. The first edition of the plan, the 2001-2003 Strategic Highway Safety Plan, was developed by the Traffic Safety Council and external safety partners following a two-day meeting of 140 transportation professionals in September 2000. See Appendix B for a listing of Wisconsin's highway safety partners.

The involvement of safety partners in the review and implementation of the Strategic Highway Safety Plan is critical to the plan's success. The development of this plan began in 2004, long before formal guidance was issued by the Federal Highway Administration for states to use in developing the strategic plans required by the federal reauthorization bill SAFETEA-LU. Thus, the Traffic Safety Council was not able to involve external highway safety groups in the early stages of the plan's development. However, these groups were invited to provide input on a draft of the plan, which was distributed to the Governor's Council on Highway Safety, traffic safety commissions and local transportation planning agencies, MPO Executive Group; Operation Lifesaver Executive Board; and Wisconsin Highway Safety Coordinators Association. These stakeholders' comments and recommendations were incorporated into the plan wherever possible. In future update cycles, the Traffic Safety Council will involve external highway safety groups and stakeholders more formally in developing the plan and implementing its strategies.

Issue Area Methodology

The 2001-2003 Strategic Highway Safety Plan identified 24 tactically important safety issue areas, 22 of which were modeled after the 1998 national strategic safety plan developed under the American Association of State Transportation Officials' (AASHTO) leadership. These 24 issue areas integrated aspects of the four E's: engineering, education, enforcement, and emergency medical services. Representatives from all four E's were involved in the development of the 2001-2003 plan. In addition, the 2001-2003 plan's issue areas encompassed and aligned with the goals and priorities of other state and local plans. During the three-year cycle of the 2001-2003 Strategic Highway Safety Plan, action teams focused on the top seven of the 24 issue areas.

In 2004, the Traffic Safety Council added two issue areas to the list and reprioritized the 26 items for the next three-year plan. Each area was rated on two dimensions: highway safety importance and WisDOT's ability to improve or influence the problem. The top 10 issue areas were those with the highest composite rankings, and action teams were formed to continue progress in these areas.

The 10 issue areas in this plan are the most recent expression of Wisconsin's top highway safety priorities. WisDOT's efforts in these areas are described in Part II of this document, including implemented strategies and goals for the future. The department's progress on the remaining 16 areas is summarized in Part III.

WisDOT will collaborate with its safety partners in implementing the Strategic Highway Safety Plan through the organizations' own plans and processes. Representatives of the four E's mentioned above are already working toward the goals outlined in the plan, and the performance measures listed within each issue area provide benchmarks for measuring progress toward the department's safety goals. The Traffic Safety Council will monitor the areas closely over the next several years, with each area's sponsor providing periodic updates on progress toward the safety goals.

The Traffic Safety Council will reevaluate the plan each October to ensure the accuracy of the data and review the priorities of the issue areas. WisDOT will use this information to set priorities for highway safety improvement projects and will establish an evaluation process to assess the results of these projects. Based on the outcome of the Traffic Safety Council's evaluation, the plan will be updated annually, and these results will guide updates to other state safety plans.

Part I:
Background

Scope of the Challenge

While Wisconsin has an enviable safety record, many people still lose their lives or are injured every year on Wisconsin's roadways. The following provides a current summary of the traffic crash situation in Wisconsin:

2005 Facts and Figures

- 801 persons were killed in Wisconsin motor vehicle traffic crashes. This is an average of two lives lost each day on Wisconsin trafficways.
- 53,462 persons were injured in 37,515 reported injury crashes and 700 fatal crashes. 5,129, or 10%, of those injured were known at the time of the crash to have sustained incapacitating injuries.
- Of the 801 persons killed, 7% (42 pedestrians and 14 bicyclists) were not drivers or passengers of motor vehicles. Eleven percent (92) were motorcycle drivers or motorcycle passengers.
- Of the 801 persons killed, 41% died in alcohol-related crashes. 34% died in speed-related crashes and 17% died in crashes that involved both speed and alcohol.
- Of the 536 drivers who were killed and tested for alcohol concentration, 190 drivers (35%) had an alcohol concentration of .08 or above.
- Fifty nine percent of persons killed in passenger car and light truck crashes (for instances in which safety belt use could be determined) were not using safety restraints.
- Seventy-six percent of all motorcyclists killed in crashes (for instances in which helmet use could be determined) were not wearing helmets.
- Sixty-one percent of all crashes (125,174) occurred off the state highway and interstate systems, on county trunk and local roads. City police and county sheriffs responded to 107,866 (86%) of these crashes.
- The total number of registered vehicles was 5,371,800 a 2% increase over 2004.

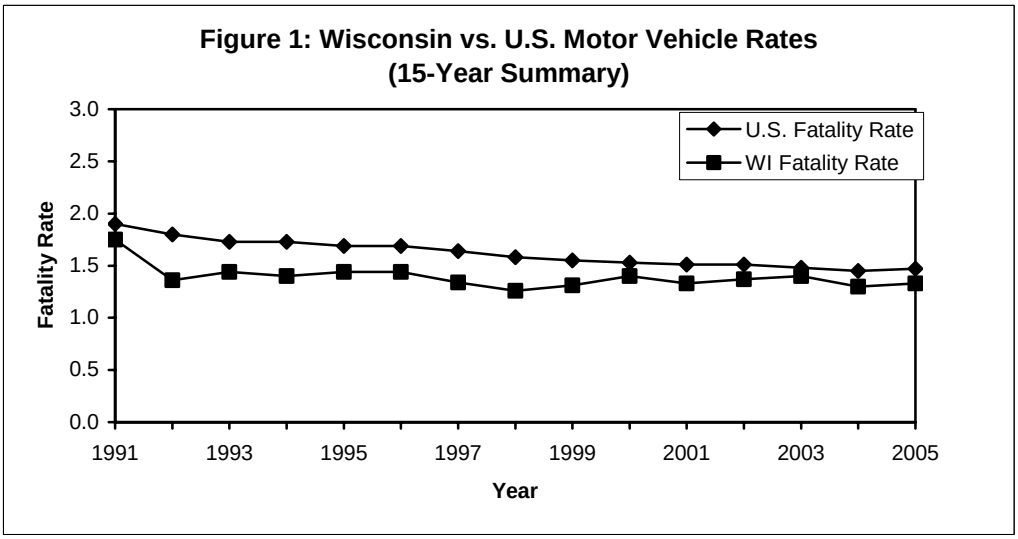
Traffic crashes are not accidents but avoidable events caused by a single variable or chain of variables. To provide an even clearer picture of the motor vehicle crash situation in Wisconsin, the following examines these elements in more detail and describes the trends.

NOTE: The definition of a "reportable crash" changed starting January 1, 1996. For a Property Damage Only crash, the reporting threshold was raised from $500 to $1,000 to "any one person's property." Government-owned property changed to $1,000 for government-owned vehicles, and remained at $200 for all other government-owned property. This change in the threshold most likely contributed to the decline in property damage crashes (and therefore, total crashes) as compared to prior years.

How Wisconsin Compares

Wisconsin traditionally ranks as one of the safest states in the nation. From 1991-2005, Wisconsin's motor vehicle fatality rate decreased 33.5% from 2.0 to 1.33. Wisconsin has also remained consistently below the national mileage fatality rate (see Figure 1).

Figure 1: Wisconsin vs. U.S. Motor Vehicle Rates (15-Year Summary)

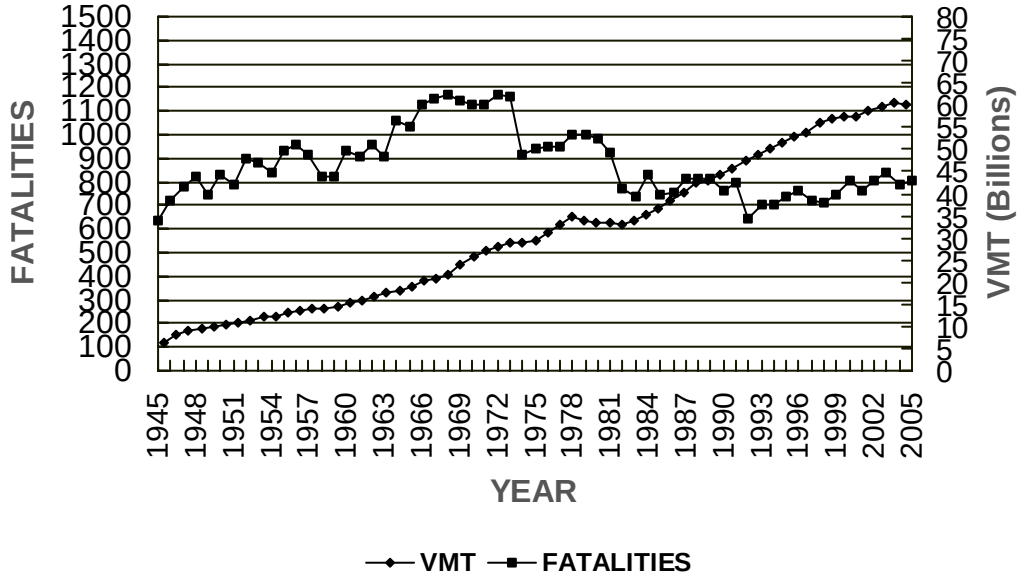


Fatality Rate = Deaths per 100 million vehicle miles traveled.

Traffic Fatality Trends

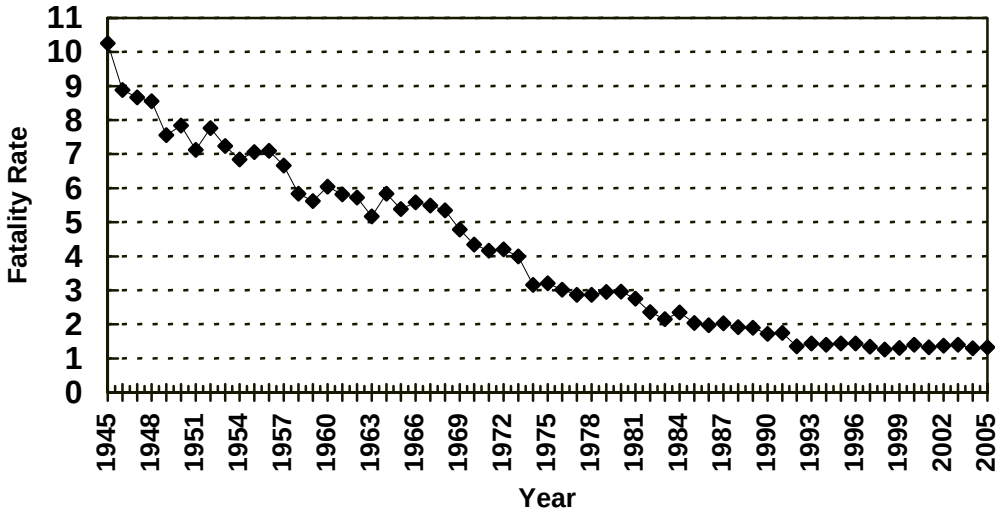
Figure 2 shows Wisconsin traffic deaths and total travel for 1945-2005. The annual death toll increased erratically during the 1950s and 1960s, peaking at 1,168 fatalities in 1972. This was followed by a sharp, sudden decline in 1974, a year that saw a new, national 55 mph maximum speed limit, an oil embargo, engineering improvements and the beginning of a recession. A sharp decline in traffic deaths occurred in 1982, the first year of Wisconsin's tougher drunk driving law and another recession. Another sharp decline in 1992 coincided with the passage of laws that created new penalties and treatment opportunities for Operating While Intoxicated (OWI) repeat offenders.

Figure 2: Traffic Fatalities and VMT (1945-2005)



As shown in Figure 3, the state's fatality rate was an unenviable 10.25 deaths per 100 Million Vehicle Miles Traveled (VMT) in 1945. This rate declined steadily in the post-war years, with noticeable declines through the 1950s, and again in the early 1970s. In 1998, the fatality rate was at an all-time low at 1.26 deaths per 100 Million VMT.

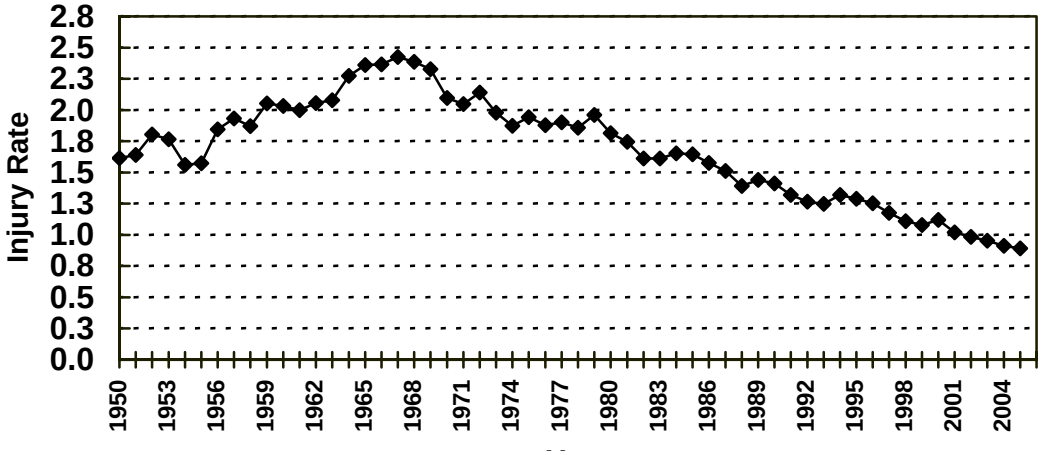
Figure 3: Traffic Fatalities per 100 Million VMT (1945-2005)



Traffic Injury Trends

Traffic injuries and vehicle miles of travel for the years 1950-2005 are shown in Figure 4. As with traffic fatalities, the rate of traffic injuries climbed through the 1950s and 1960s. However, as better safety features were incorporated into the design of motor vehicles (such as the use of safety belts, safety glass, plastics, and padded surfaces in automobile interiors) throughout the 1970s and the following decades, the rate of injuries has experienced a steady decline.

Figure 4: Traffic Injuries per 100 Million VMT (1950-2005)



The Location of Traffic Crashes

Figure 5 illustrates the dramatic differences among fatal crashes for passenger cars and light trucks on various road systems. Interstate highways are the safest roads within the state when crashes are adjusted for amount of travel. County highways and local streets have relatively high fatalities and state highways (non-interstate) have the highest traffic fatalities.

Figure 5: Fatal Crashes by Road System for 2005

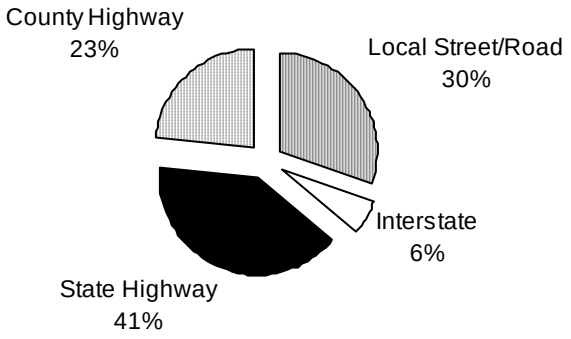
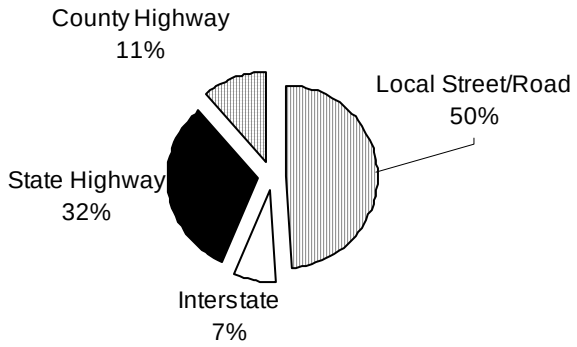


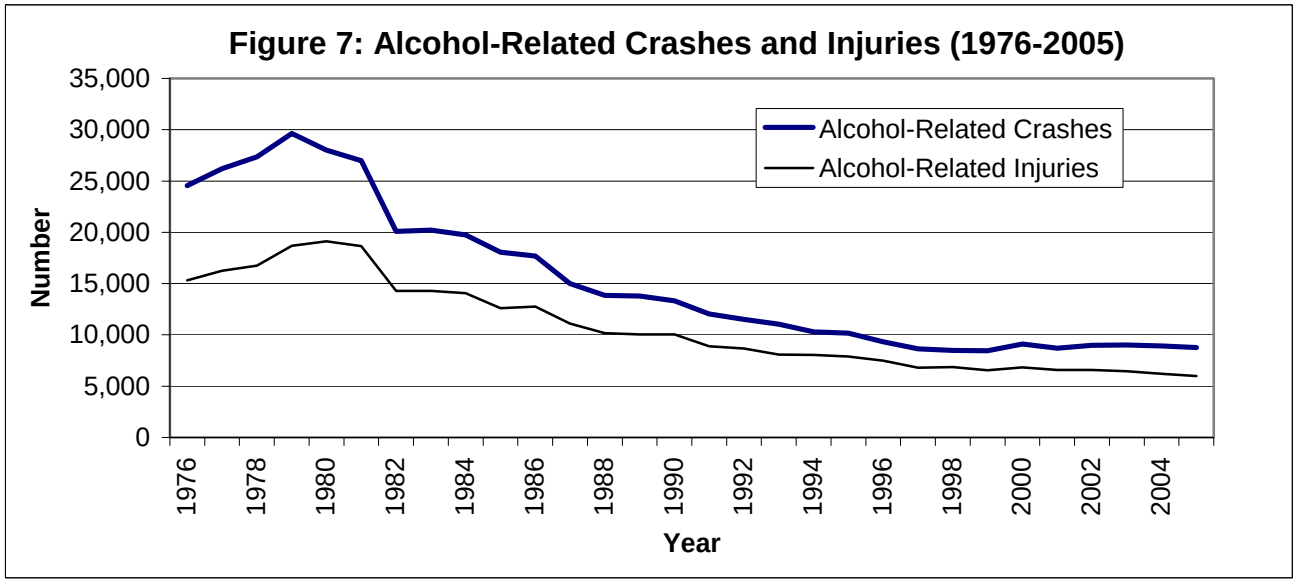
Figure 6 highlights the differences among total crashes on various road systems for passenger and light trucks. Local Streets/Roads had the highest number of total crashes (61,483) followed by State Highways (40,339), County Highway (14,355) and Interstate (8,997).

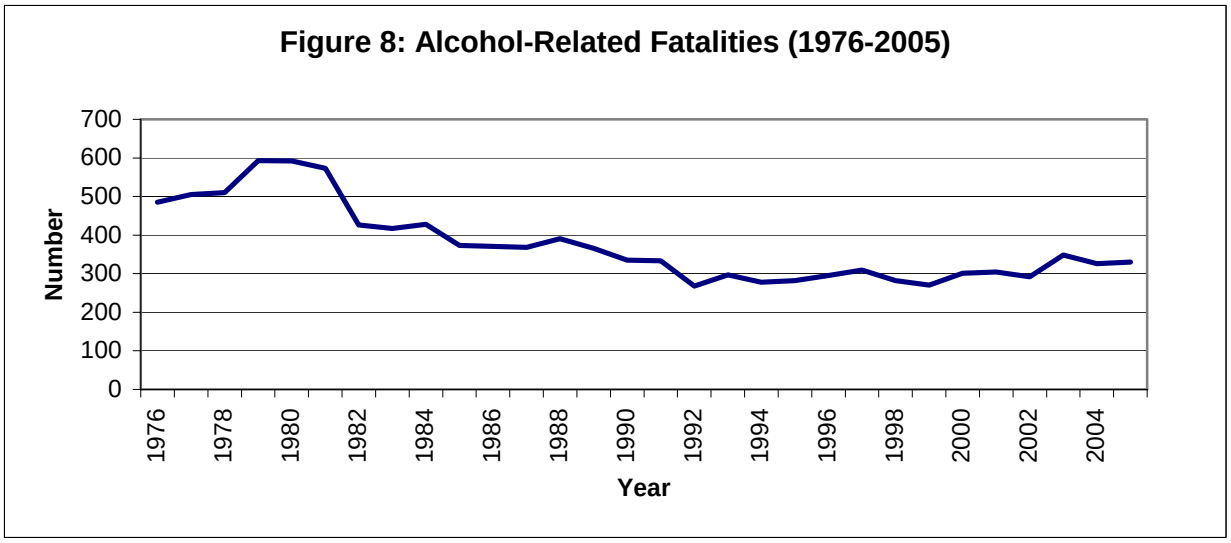
Figure 6: Total Crashes By Road System for 2005



Traffic Safety Today

Figures 7 and 8 show the total number of alcohol-related crashes, injuries and fatalities from motor vehicle crashes for 1976-2005. Alcohol-related crashes, injuries and fatalities reached their peak around 1979 with crashes and injuries dropping off considerably due to changes in legislation (e.g., raising the minimum drinking age, tougher OWI laws) and intensive enforcement. Note however, that alcohol-related fatalities have remained relatively constant since about 1982, representing a continuing safety issue.



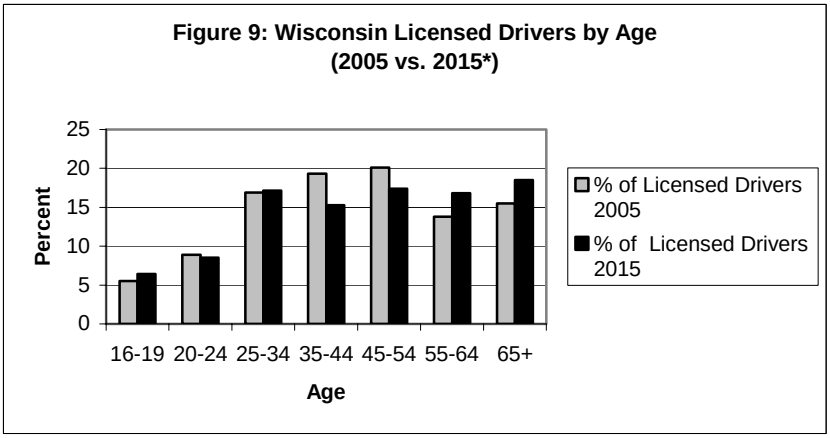


In 2005, speed was listed as a contributing cause in 15% of all crashes and in 17% of all fatal crashes. “Driving too fast” means that the driver involved in the crash received a citation for speeding or was listed on the accident report as “exceeding the speed limit” or “speed too fast/ condition.”

The Future for Traffic Safety

Figure 9 shows the changes in the demographic pattern of Wisconsin drivers that are expected by the year 2015. Fewer younger drivers will be on the road which may reduce the overall crash rate slightly. However, the expected increase in older drivers may offset the safety benefits accrued from fewer younger drivers. Note that the baby boom generation (born between 1946 and 1964) will begin to have its greatest impact in the years 2020-2025, when even greater numbers of this population segment are 65 or older.

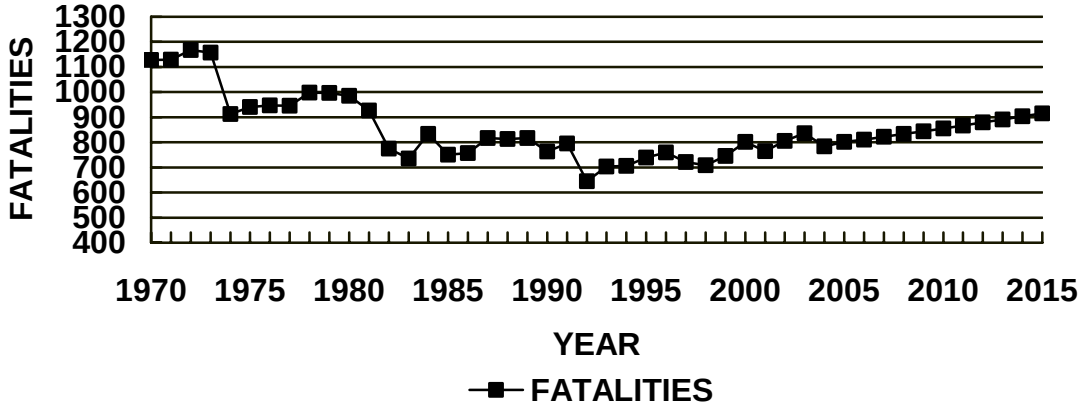
Figure 9: Wisconsin Licensed Drivers by Age (2005 vs. 2015*)



*****Projection based on 2015 population estimates from the Wisconsin Department of Administration (2005).

Wisconsin estimates about 71 billion VMT in the year 2015*. This represents an 18.3% increase in total travel over the 60 billion VMT experienced in 2005. If crash rates are held constant, increasing traffic will mean more crashes, resulting in higher death and injury totals. On the other hand, if crash rates continue to improve, as they have historically, deaths and injuries will decline. Figure 10 illustrates the number of traffic deaths that might occur over the next decade with a constant death rate**. Although no one can predict future trends, current efforts and the strategies proposed in this plan are directed toward improving this rate.

Figure 10: Traffic Deaths (1970-2015)



*Note: this is a preliminary projection as of 9/13/06.
**Projection represents a rate held constant at 1.35 and is based on the recent five-year (2001-2005) trend

Part II:
Issue Areas

The WisDOT 2001-03 Strategic Highway Safety Plan (SHSP) included action plans to address the following seven emphasis areas:

- Institute graduated driver licensing;
- Improve the design and operation of intersections;
- Increase safety belt use;
- Increase driver safety awareness;
- Improve data and decision support systems;
- Keep vehicles on the roadway and minimize the consequences of leaving the roadway; and
- Reduce impaired driving.

In September 2003, the WisDOT Traffic Safety Council (TSC) was provided with a summary report on the status of action taken in these emphasis areas in order to begin the process of updating the SHSP. The TSC began by confirming that the 24 highway safety issue areas that formed the conceptual framework for the 2001-03 Strategic Plan were still appropriate for use in updating the plan. In addition to the 24, the TSC identified two new emphasis areas, improve traffic incident management and reduce speed-related crashes, bringing the total to 26 safety emphasis areas.

At its April 1, 2004 meeting, the TSC conducted a rank-ordering exercise for the 26 highway safety issue areas, giving equal weight to the agency's ability to influence and the issue's importance relative to the number of traffic crashes, injuries and deaths associated with it.

The results of this exercise are shown below. Seven of the 10 highest ranked issue areas were among the eight issue areas identified for action planning in the 2001-03 strategic safety plan (shown in shading in the table below).

2004 Rank Order	Composite Rating	Highway Safety Issue Area
1	**69.36**	**Increase safety belt use/air bag effectiveness**
2	**66.83**	**Improve design/operation of intersections**
3	**62.14**	**Improve data/decision support systems**
4	**61.09**	**Reduce speed-related crashes**
5	**58.35**	**Reduce impaired driving**
6	**54.92**	**Minimize consequences of leaving roadway**
7	**53.63**	**Design safer work zones**
8	**52.23**	**Reduce head-on and cross-median crashes**
9	**51.44**	**Keep vehicles on the roadway**
10	**51.00**	**Increase driver safety awareness**
11	47.21	Sustain proficiency in older drivers
12	43.51	Insure drivers licensed / competent
13	41.55	Improve motorcycle safety
14	41.36	Curb aggressive driving
15	39.57	Improve traffic incident management
16	38.95	Drive more safely in inclement weather
17	37.96	Make truck travel safer
18	33.76	Institute Graduated Driver Licensing
19	33.53	Create more effective processes/SMS
20	33.49	Make walking/street crossing safer
21	30.87	Insure safer bicycle travel
22	24.83	Keep drivers alert

2004 Rank Order	Composite Rating	Highway Safety Issue Area
23	19.37	Enhance EMS to increase survivability
24	19.06	Reduce deer and other animal crashes
25	16.46	Reduce vehicle-train crashes
26	13.69	Increase safety enhancements in vehicles

On the following pages, you will find plans to address Wisconsin's top 10 highway safety issue areas, including progress toward performance goals. Each issue area paper is organized with background information; performance measures; the challenges we face; strategies for the future, both short-term and long-term; and a list of strategies that were implemented between 2001 and 2005.

Issue Area 1: Increase Safety Belt Use

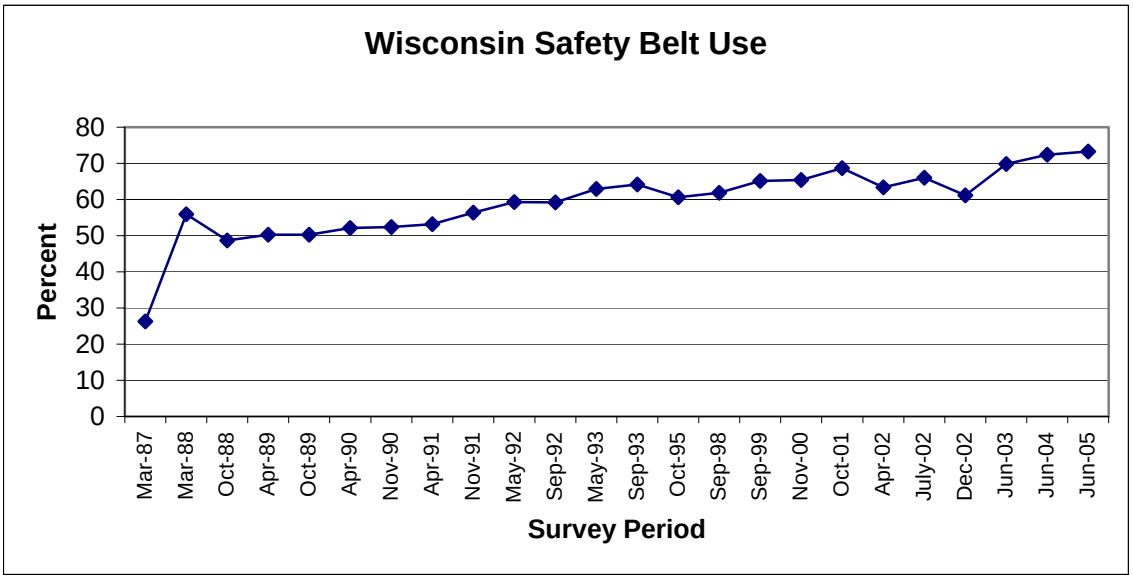
Background

The combination of air bags with lap and shoulder safety belts offers the most effective safety protection available for passenger vehicle occupants. In 2001, the National Highway Traffic Safety Administration (NHTSA) reported that frontal crash deaths of belted occupants in vehicles equipped with frontal air bags were 26% lower for drivers and 14% for passengers than those in vehicles not equipped with frontal airbags. However, deaths of children younger than 10 riding in the front passenger seat are about 34% higher than expected. Insurance Institute for Highway Safety analyses initially suggest that deaths of drivers involved in driver-side collisions in passenger cars equipped with side air bags were reduced by about 45% when the device included head protection, and by 11% when it protected only the torso.

Wisconsin enacted a secondary safety belt law in December 1987 with a $10 forfeiture and no points assessed, and a primary child safety seat law with a $75 forfeiture in May 1992. To address child passenger safety for older kids, booster seat legislation was signed into law in February 2006 (2005 Wisconsin Act 106). It requires the use of a booster seat for children who are too large for child safety seats but still too small to use adult safety belts. In 2006, 33 other states and the District of Columbia had child restraint laws in effect.

In 2005, 22 states had primary safety belt laws, 27 states had secondary laws, and one state had no safety belt law. Safety belt use is 10-15% higher in states with standard (primary enforcement) safety belt laws than in those with less demanding laws or none at all. States have realized a significant increase in safety belt use through the combination of a primary law and aggressive awareness and enforcement efforts.

Since March 1987, the Wisconsin Department of Transportation has conducted periodic statewide observation surveys of safety belt use. In 2005, national average safety belt use rose to 82%. In Wisconsin, the average observed safety belt use rate rose to 73.3% in 2005. While this usage rate remains well below the national average, it is the highest rate of safety belt usage in the state's history.



Unfortunately, 328 (or 59%) of the 560 vehicle occupants killed in 2004 collisions for whom seat location and safety equipment use is known, were not wearing their safety belts. Because safety

belts are approximately 50% effective for preventing fatalities in crashes where motorists would otherwise die, WisDOT estimates that an additional 164 lives could have been saved in 2004 if those 328 people had used safety belts when traveling on state roads.

Performance Measures

- To increase Wisconsin's observed safety belt usage rate 2% annually from 73.3% in 2005 to no less than 79% by 2008.
- To reduce the percentage of unrestrained vehicle occupants killed in motor vehicle crashes from 59% in 2005 to no more than 50% by 2008.

Challenges

- Wisconsin social mores -- local control and individualism. Public resistance to what some perceive as a personal choice on safety belt usage.
- Lack of legislative consensus to move toward a standard safety belt law.
- Weak existing safety belt legislation; secondary enforcement, $10 fine, no costs, no demerit points assessed.
- Escalating vehicle speeds, decreasing survivability when involved in a crash.
- Broad consumer misuse of child passenger safety equipment, including improper installation and mounting.

Strategies for the future – short-term

Enforcement

- Active and aggressive participation in the national *Click It or Ticket* mobilization.

Enactment

- Enhancements to existing legislation; fines and/or points assessment.
- Consequences for Graduated Driver Licensees (GDL) for safety belt violations.
- Enactment of enhanced child booster seat legislation (2005 Wisconsin Act 106, Child Passenger Safety-Booster Seat Legislation, was signed into law in February 2006 with an effective date of June 2006).

Education

- Coordinated public outreach on the effectiveness of safety belts in preventing fatal injuries.
- Targeted public outreach and funded educational efforts to increase correct child passenger safety equipment installation and use.
- Targeted public outreach to at-risk population groups.

Strategies for the future – long-term

Enactment

- Work with national partnership affiliations (FHWA, NHTSA, AASHTO, and GHSA) to encourage the automotive industry to develop both passive and active safety belt enhancements, multiple air bag locations, and built-in child passenger restraint systems.
- Enactment of comprehensive safety belt legislation that addresses both standard enforcement and traffic stop data collection issues.

Education - Mass media

- Focused public outreach and education to low usage, at-risk population groups.

Education - Training

- Formally train law enforcement officers in identifying and correcting improperly fitted child passengers and improperly installed child safety equipment.

Community Empowerment

- Support and promote child passenger seat fitting stations and educational opportunities.

Implemented strategies: 2001-2005

Strategy - High-visibility enforcement

- The Bureau of Transportation Safety (BOTS) managed and supervised the distribution of nearly 100 extraordinary (overtime) highway safety *Click It or Ticket* grants to state, county, and local law enforcement agencies in targeted high-risk areas of the state.
- BOTS field staff actively solicited in-kind participation and activity reporting from more than 100 law enforcement agencies during the national mobilization effort. Participating agencies were eligible for equipment grants, specific to enhancing future traffic law enforcement efforts.

Strategy - Enactment

- State coalitions and WisDOT staff provided historical resources and data in the introduction of Senate and Assembly bills to enact standard safety belt enforcement in Wisconsin.
- Similar resources were provided for an Assembly bill to add an enhanced booster seat law for the state.

Strategy – Education

- Child Passenger Safety Certification training.
- Wisconsin Information Network for Safety.

Strategy – Community Empowerment

- Community Safety Seat Fitting Stations.

Strategy - Mass media

- In 2005, Wisconsin joined the national program of *Click It or Ticket* to brand both a public information and education campaign with enforcement.
- The national media campaign was combined with state resources to dramatically increase value-added broadcasts of the *Click It or Ticket* message across all of the state's media markets.
- The WisDOT Office of Public Affairs coordinated a wide variety of earned media opportunities at both the state and local level, along with formal press conferences to kickoff the national *Click It or Ticket* mobilization effort.

Issue Area 2: Improve Design/Operation of Intersections

Background

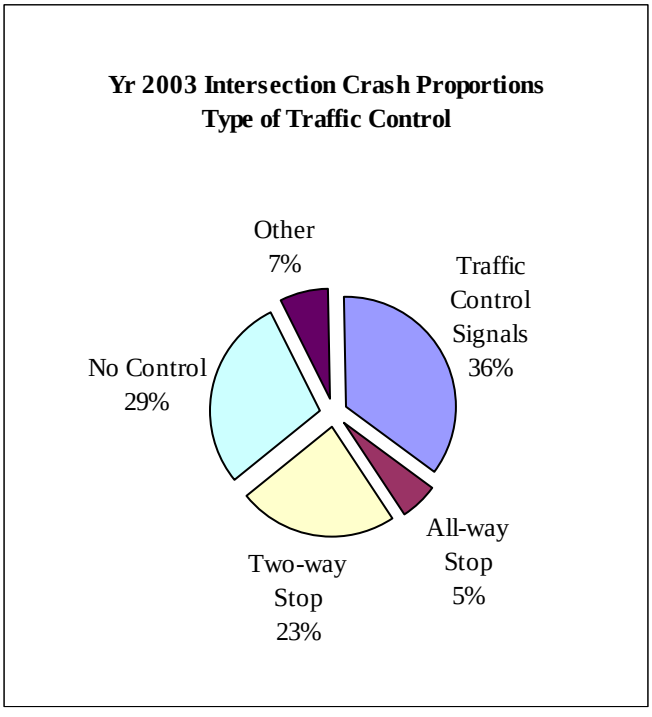
As shown in the table below, intersection crashes accounted for 48,214 (34%) of the total crashes that occurred statewide during 2004. Additionally, intersection crashes accounted for 46% of the injury crashes and 27% of the fatal crashes statewide. These locations include the intersections on all types of highway functional classifications or interchange ramp terminals.

As can be noted, although intersection-related crashes account for about 34% of annual crashes statewide, they result in over 45% of all injury and fatality crashes.

Crashes by Location Type and Severity*				
	Severity			
Location	Fatal	Injury	Property Damage	Total
Intersection	190	18,483	29,541	48,214
Non-Intersection	524	19,968	59,502	79,994
Parking Lot	0	1,018	8,607	9,625
Private Property	0	400	1,952	2,352
Total	714	39,869	99,702	140,285

*Copied from 2004 Wisconsin Traffic Crash Facts

During 2003, approximately two-thirds (66%) of all intersection crashes were located on local roads. The other 34% were located on the state trunk highway (STH) system.



Intersection locations may be uncontrolled, or have controls provided by: YIELD signs, STOP signs (two- or all-way), traffic control signals, or roundabouts. The graphic at left depicts the relative percentage of these crashes according to the type of intersection traffic control.

These basic statistics, shared above, have been relatively consistent over recent years. Based on 2003 National Safety Council estimates, total economic loss caused by intersection crashes statewide is close to $0.9 billion.

For this discussion, the issue of safety at intersections is further aggregated into three key focus areas:

1. *Data information and decision support*
2. *Knowledge development*
3. *Concept implementation*

Performance measure

- Reduce fatal and incapacitating injury intersection crashes by 10% by 2008.

Challenges

- The greatest challenge to WisDOT and local agencies for identifying and implementing traffic safety engineering initiatives is adequate resources. Specifically, these limited resources include: staff, operational funding, and automation tools.
- A secondary, but perhaps equally significant challenge, is location information for crashes, particularly on the local roads system.
- Lastly, a broader awareness of traffic safety engineering issues is needed for appropriate decision-making at the staff and management levels.

Strategies for the future - short term

Focus Area 1: Data information and decision support

- Complete and implement strategies under the Strategies in Development section below.
- Link critical data elements to improve traffic safety engineering at intersections. These elements include: crash data, roadway inventory and asset information, and GIS mapping functionality.

Focus Area 2: Knowledge development

- Make electronic crash data routinely accessible to local agencies.
- Provide training opportunities that will allow practitioners to learn about traffic safety engineering concepts and appropriate methods to mitigate crashes at intersections.

Focus Area 3: Concept implementation

- Evaluate the implementation of promising countermeasures for specific situations such as lighting at unsignalized intersections where high night crash rates are occurring.
- Identify and establish appropriate traffic safety performance measures such as safety performance functions (SPF) and accident modification factors (AMF).

Strategies for the future – long-term

Focus Area 1: Data information and decision support

- Institutionalize traffic safety by implementing tools developed to share crash data as information across the agency and to local transportation partners (refer to Intersection Safety Evaluation Tool (ISET) described under Strategies in Development).
- Sustain Regional Intersection Safety Plans that will use newly developed tools to identify and prioritize safety needs.

Focus Area 2: Knowledge development

- Institutionalize traffic safety by providing a training curriculum that will allow state, local, and consultant practitioners to expand their knowledge of traffic safety engineering.

Focus Area 3: Concept implementation

- Establish the safety performance functions (SPF) for intersections on all the highway functional classifications and accident modification factors (AMF) for all the safety engineering improvements applied in Wisconsin.

Strategies in Development

Efforts recently initiated or pending with intent on improving safety at intersections with respect to the focus areas indicated include:

Focus Area 1: Data information and decision support

- Intersection Safety Evaluation Tool – A research-based product that will aid transportation officials in identifying relative safety performance based on intersection characteristics. (*BHO, UW*)

Focus Area 2: Knowledge development

- Training/Staff Development:
    - Intersection Safety Training (*FHWA*)
    - Roundabout Design (*BPD*)
    - Signal Detection Design/Operation (*BHO*)

Focus Area 3: Concept implementation

- Rural Intersection Decision Support (Pooled Fund Study) – Evaluation of technologies used to detect vehicles on high-speed intersection approaches, and provide warning to motorists on the side road with the intent of preventing failure-to-yield, right-angle crashes. (*BHO*)
- Initiation of Statewide Signals and Interchange Plans – Plans will consider traffic volume information and other relevant information to project probable locations where traffic signal warrants will be met. This effort has implications within the Interchange Plan process being developed in Bureau of State Highway Programs. (*BHO, BPD, BSHP*)
- Signal Operations Peer Review – Process sponsored by FHWA being used to evaluate the current state of WisDOT signal operations and recommendations to improve overall levels of service to the public. (*BHO*)
- Local Road Crash Mapping Demonstration – Pilot application being developed to automate crash location mapping tool. (*BHO, UW, FHWA*)
- Policy Modifications:
    - TDM guidance being expanded to include intersection design and pedestrian facilities (*BHO*)
    - Pedestrian Facility Design Manual development (*BSHP*)

Implemented strategies: 2001-2005

Efforts recently completed with intent on improving safety at intersections with respect to the focus areas indicated include:

Focus Area 1: Data information and decision support

- Statewide Traffic Operations Business Plan – Includes objectives and identifies processes for improving safety at unsignalized and signalized intersections. (*BHO*)
- Intersection Crash Data Inventory – Regional summary of all intersections on the STH system that meet established minimum crash thresholds logically organized to provide crash characteristics at specific locations. (*BHO*)

Focus Area 2: Knowledge development

- Lead State Initiative to Reduce Crashes at Unsignalized Intersections – This effort is based on the Federal initiative to implement the NCHRP 500 series reports. Although this effort is clearly focused on unsignalized intersections, it provides a resource for obtaining and

analyzing crash data anywhere on the transportation system. Ultimate tool provides guidance to local and state officials responsible for highway safety (*BHO*)

- WisDOT Traffic Safety Engineering Workgroup (TSEWG) – A continuing cooperative effort with the UW–TOPS Lab, the TSEWG provides a working forum for technical issues with diverse representation (http://www.topslab.wisc.edu/workgroups/trafficsafety.htm). (*UW, BHO, BPD, Regions, FHWA*)
- Training/Staff Development:
    - Intersection Design Training (*BPD*)

Focus Area 3: Concept implementation

- AAA Intersection Safety Audit – Location-specific intersection safety reviews that utilized a unique public/private relationship and were based on a common objective of increasing safety. (*AAA Wisconsin, City of Milwaukee, City of Madison, FHWA, BHO, BPD, Regions*)
- Conversion of Signal Indications to use LED Technology – New indications are brighter and consume less energy. Additionally, the conversion of signal indications from incandescent lamps to LED modules is now approved for Highway Safety Improvement Program funding on the local road system. (*BHO*)
- Policy Modifications:
    - FDM guidance regarding protected left-turn bays (*BPD*)
    - FDM guidance regarding access spacing near interchanges (*BPD*)
    - FDM guidance regarding roundabout citing and design (*BPD*)
    - TGM policy requiring intersection lighting at all signalized intersections (*BHO*)

Issue Area 3: Create a More Effective Safety Management System Including Data Collection, Linkage, Analysis, Dissemination and Decision-making Processes

Background

Quality data and analyses are critical components of the state's highway safety management system and are essential for the development of sound public policy and effective countermeasures. Information about roadways and their environments, users' characteristics and behaviors, crashes and their outcomes should be timely, complete, consistent, accurate and readily accessible. State-of-the-art technologies and procedures should be applied to gather, integrate, and utilize information. Institutional cooperation and coordination, both within and outside the department, resulting in open, coordinated, defensible decision-making processes, will ensure the best use of limited resources and improved safety on Wisconsin roadways.

Status: The Badger TraCS suite of crash/citation data collection software and TraCS training are being rolled out to Wisconsin law enforcement agencies, and automated reports from a number of trained agencies are being received by the Division of Motor Vehicles. Crash locations on state roadways for all WisDOT regions except the southeast are being entered when the crash reports are received. Numerous data transmission projects in cooperation with the State Courts, the Office of Justice Assistance and county records systems are underway.

Key Focus Areas: The department is working to improve the dissemination and availability of the data collected, and to improve safety analysis and decision-making processes. This initiative includes two key focus areas:

1. *Improve data and decision support systems.*
2. *Create more effective decision processes/safety management systems.*

Performance measures

- The primary recommendations of the March 2005 State Traffic Records Assessment will be addressed by June 15, 2006 in Wisconsin. Eligibility for Section 408 funds requires a state Traffic Records Coordinating Committee that produces a detailed multi-year Traffic Safety Information System (TSIS) strategic plan, and reviews it annually.
- WisDOT will continue to lead the development of the state Traffic Records Coordinating Committee, a workgroup that will research and produce an environmental scan for data standards, coordinated planning and data sharing between state agencies by June 15, 2006 and will update the scan annually.
- The state TraCS Steering Committee will organize, produce and sign off on a three-year strategic plan for TraCS implementation by December 31, 2006.
- 5% of crash reports and 30% of citations will be received electronically by WisDOT by July 1, 2007.
- A working committee will make recommendations to the WisDOT Board of Directors for mechanisms for improved access to and dissemination of WisDOT- maintained records, integrated with a data communications plan by June 15, 2007.

Challenges

Focus Area 1: Improve data and decision support systems

- Lack of time to devote to project/coordination.
- Interagency coordination and collaboration.
- Limited Information Technology resources.

Focus Area 2: Create more effective decision processes/safety management systems

- Stovepipe organization both in federal and state DOT.
- Lack of requirement/accountability for interdisciplinary/interagency communication.
- Lack of coordination with local planners and bottom-up planning.
- Funding constraints.
- Staff reductions.
- Lack of expertise in strategic decision-making.

Strategies for the future - short-term

Focus Area 1: Improve data and decision support systems

- Create and implement a statewide plan for implementation and maintenance of the TraCS system and training of field data collectors and IT support staff.
- Establish a communication plan for data. Identify format, detail, and graphical user interface needs of all types of data users.

Focus Area 2: Create more effective decision processes/safety management systems

- Establish a safety improvement program to direct WisDOT resources at largest areas of opportunity.
- Integrate the State Traffic Records Coordinating Committee's safety information planning process with the WisDOT safety planning process.
- Develop a strategic plan for traffic safety information collected by and/or available to WisDOT.
- Engage MPOs and other local planners in the use of safety conscious planning.
- Develop a training program to educate data users at various levels in analysis, collaboration, and strategic decision-making techniques.

Strategies for the future - long-term

Focus Area 1: Improve data and decision support systems

- Standardize data elements. Perform environmental scan to identify government authorities or projects that may drive data collection decisions/formats.
- Develop a location reference system that will support linkage with state and local traffic records and records management systems.
- Identify, evaluate, and implement technology that will assist with sharing and transferring data between agencies; extracting and retrieving data; analyzing data; and disseminating data.
- Establish a repository of traffic crash data that is accessible to the general highway safety community, with links built in.

Focus Area 2: Create more effective decision processes/safety management systems

- Develop a set of analytical tools, guidelines, and procedures that meets federal requirements, WisDOT and local business needs.
- Establish a safety analyst workgroup.
- Create High Risk Rural Road Program guidelines.
- Update Highway Safety Improvement Program guidelines to focus on injury and fatality crash reduction.
- Update Highway Safety Improvement Program evaluation process and create reports required by SAFETEA-LU.

Implemented strategies: 2001–2005

Focus Area 1: Improve data and decision support systems

- DMV developed a Wisconsin TraCS (Traffic and Criminal Software) system, based upon the National Model program, an automated data collection and transmission system that will eventually be used statewide by all law enforcement agencies. The software suite now includes six forms: Wisconsin Motor Vehicle Accident Report (MV4000), Abbreviated Car/Deer, Amended MV4000, Driver Information Exchange, Uniform Traffic Citation, and Warning Citation.
- DMV began in-house reference point coding to improve the timeliness of location-specific crash data on state highways.
- BOTS published three annual crash facts books, including two on alcohol and motorcycle issues.
- DMV updated traffic crash fatality information on the DMV website on a weekly basis.
- In 2004, the first full year of emergency department patient data was linked to traffic crash data within the Crash Outcome Data Evaluation System (CODES) data set, and county-level crash, hospital discharge, and ED data area was available on the state CODES Internet site

Focus Area 2: Create more effective decision processes/safety management systems

- BOTS managed a peer assessment of Wisconsin's Traffic Safety Information System in February-March 2005. The resulting report and recommendations will be used in the development of the state's Traffic Safety Information System Strategic Plan.
- DTD completed a safety plan as part of its strategic business planning. Plan included a safety engineer in each region, a coordinated safety program, and improvements in data and analytical tools.
- Wisconsin is a lead state in implementing NCHRP Report 501: "Integrated Safety Management Process."
- In December 2004, DTIM sponsored the 2-day FHWA training course on Safety Conscious Planning.

Issue Area 4: Reduce Speed-Related Crashes

Background

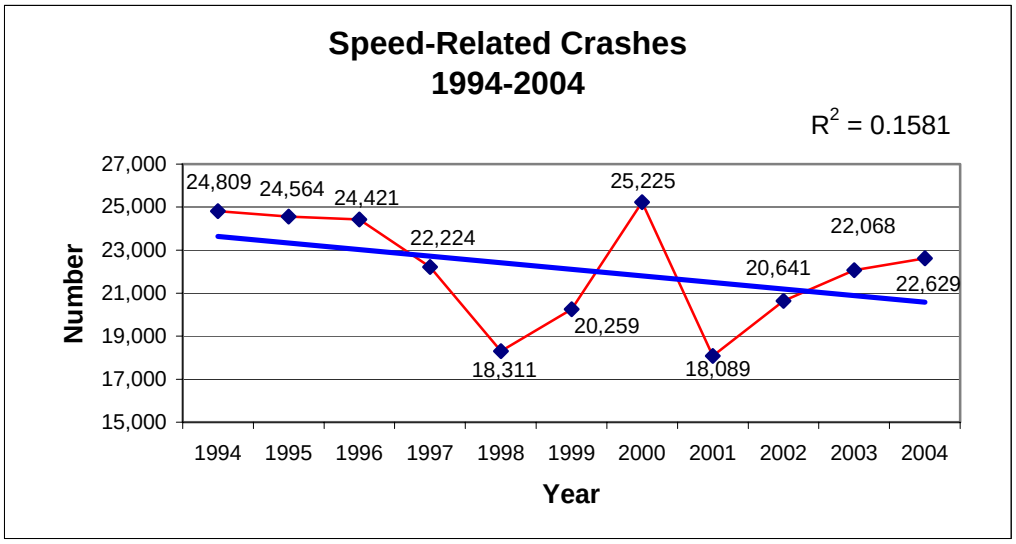
Exceeding posted speed limits and driving too fast for conditions are both illegal and dangerous. Over 33% of all traffic fatalities in Wisconsin are "speed-related," which makes speed second only to alcohol as the most common factor in fatal crashes. Speed-related crashes tend to result in more severe injuries than crashes in which speed is not indicated as a possible contributing circumstance on the crash report form or in which no driver received a citation for a speed violation. Reducing speed-related crashes – and the resulting injuries and deaths – is clearly a high priority traffic safety emphasis area.

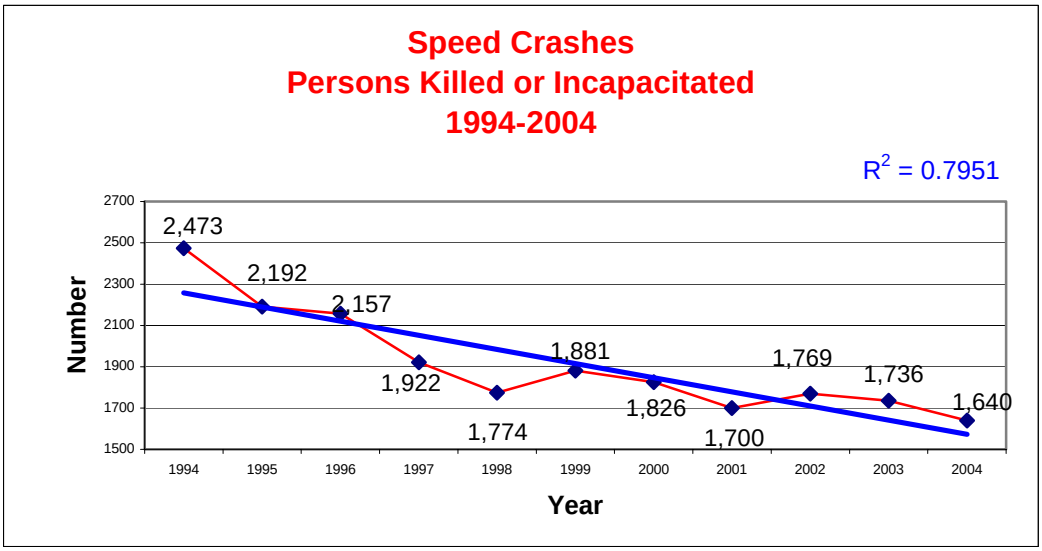
Speed-related convictions represent roughly one-third of the traffic convictions entered on driver records every year – over 300,000 total. "Speeding-Intermediate" (11-19 mph over) is the most common traffic citation issued in Wisconsin – over 150,000 per year.

Speed-related crashes are not evenly distributed throughout the year; they peak during the winter with over 45% occurring December – February. The demographics of drivers involved in speed-related crashes show differences by gender and age, i.e., 65% are male and 24% are under the age of 20.

If unreasonable/imprudent/illegal speed is a relatively well-defined traffic safety challenge, then the appropriate response may be to keep doing the things that are known to slow drivers down to reasonably safe speeds, such as:

- High visibility, low tolerance, consistent enforcement of existing speeding laws;
- Deployment of traffic law enforcement personnel that favors street and highway corridors with above-average occurrence of speed-related crashes;
- Penalties for speeding that are commensurate to the seriousness of the offense; and
- Establishment of rational speed limits based on sound traffic engineering principles.





To establish a fact-based foundation for further review and refinement of existing enforcement and engineering tactics and principles in an effort to reduce speed-related crashes, the department will:

- Comprehensively review the existing level of effort, standards and procedures employed by department personnel in
    - Measuring speed-related crashes;
    - Enforcing speed-related traffic laws; and
    - Establishing speed limits below the statutory maximum.

Performance goal and performance measures

*Goal***:** *Decrease the number of people killed in speed or driver aggression-related crashes to 230 by 2008. (2004 baseline was 261)*

Performance measures:

- Reduce speed-related crashes to 18,971 by 2006 and to 18,022 by 2008.
  (2004 baseline was 22,629 crashes)
- Reduce the number of people killed or seriously injured in speed-related crashes to 1,605 by 2006 and 1,546 by 2008.
  (2004 baseline was 1,640 people killed or seriously injured)
- Increase perception of risk of being ticketed for a speed violation to the extent that speed drops from the second most common driver contributing cause of crashes to only 10% of driver contributing cause of crashes.
  (2004 baseline was 15.5% of driver-related PCC's)

Challenges

Focus Area: Speed-related level of effort, standards and procedures employed by department personnel

- Continued legislative interest in raising maximum speed limits on rural freeways.
- High volume of requests from local officials to lower posted speed limits on state trunk highway roadways in or near urban and urbanizing areas.
- Speed enforcement becoming increasingly challenging for State Patrol on high traffic volumes on rural two-lane roadways, i.e., very high traffic volumes and narrow shoulders affording few opportunities to conduct safe traffic stops for enforcement purposes.

- Increasing perception by some members of the driving public and law enforcement that total monetary penalties (forfeitures, plus surcharges, court costs and penalty assessment) for speed violations are no longer commensurate to the seriousness of the offense, i.e., they are too high, not too low.

Strategies for the future - short-term and long-term

Focus Area: Speed-related level of effort, standards and procedures employed by department personnel

- Initiate training and quality improvement efforts regarding officer reporting of speed as a potential contributing factor in crashes.

Implemented strategies: 2001–2005

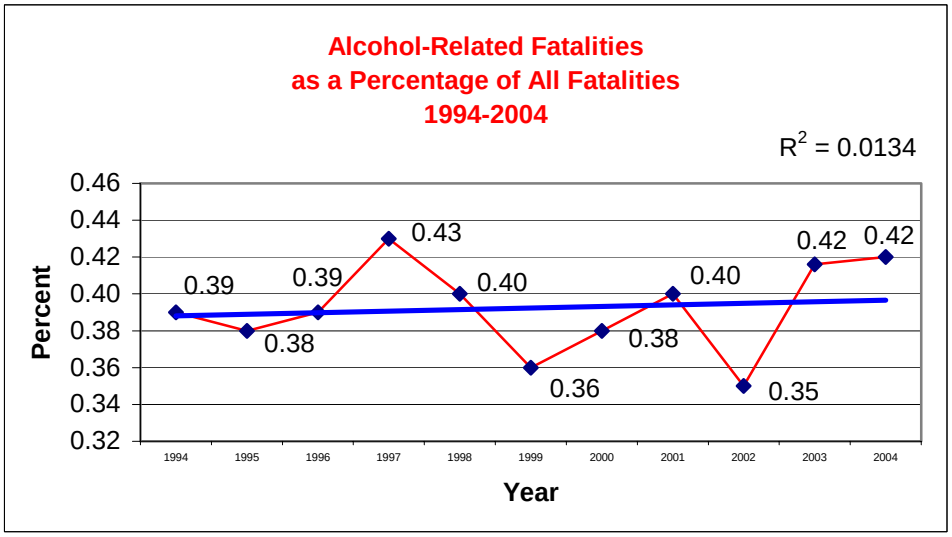
Focus Area: Speed-related level of effort, standards and procedures employed by department personnel

- Resisted legislative attempts to increase maximum speed limits on rural freeways.
- Identified need for improved officer-reporting of speed as a potential contributing factor in crashes.
- Continued system-level monitoring of average and 85th percentile speeds on rural divided and undivided highways.
- Continued periodic review of State Patrol policy and procedure for speed-related enforcement actions.
- Renewed use of crash data to identify counties and municipalities meriting high priority consideration for federal highway safety grant funding for speed-emphasis enforcement activities.
- Continued participation in national traffic safety campaigns through annual Memorial Day law enforcement mobilization focused on speed and safety belt use.

Issue Area 5: Reduce Impaired Driving

Background

Alcohol and other drug-impaired driving are illegal and dangerous. Alcohol-related crashes tend to result in more severe injuries than crashes in which no alcohol is involved. According to national data, in 2003, 38% of the state's driver fatalities had AC levels at or above 0.08, which ranked Wisconsin tied for the 8th highest among the 50 states. In 2004 in Wisconsin, over 36,000 convictions for operating a motor vehicle while intoxicated were entered into driver records. Over 40% of all traffic fatalities (over 300 per year) in Wisconsin are alcohol-related, and over 6,200 people each year suffer non-fatal injuries in alcohol-related crashes. In 2004, the alcohol-related traffic fatality rate was 0.54 per 100 MVMT, and 189 of the drivers killed in alcohol-related crashes who were tested for alcohol exceeded the 2004 .10 AC per se limit.



Reducing impaired driving is perennially identified as one of the highest priority traffic safety goals for national, state and local officials. Decades of research and experience have identified four generally-accepted objectives for reducing impaired driving. Each objective has a number of strategies that have been commonly employed, many of which have proven to be effective by repeated evaluation. Wisconsin has tried or, to some degree, has actively engaged in most of them, including:

Reduce excessive drinking and underage drinking

- Require responsible beverage service policies for alcohol servers and retailers.
- Conduct well-publicized compliance checks of alcohol retailers to reduce sales to underage persons.

Enforce OWI laws

- Conduct regular, well-publicized saturation patrols.
- Enhance OWI detection through special OWI patrols and related traffic enforcement.
- Publicize and enforce zero tolerance laws for drivers under age 21.

Prosecute, sanction and treat OWI offenders

- Suspend driver's license administratively upon arrest.
- Establish stronger penalties for BAC test refusal than for test failure.
- Eliminate diversion programs and plea bargains to non-alcohol offenses.
- Screen all convicted OWI offenders for alcohol problems and require treatment when appropriate.

Control high-BAC and repeat OWI offenders

- Allow courts to order vehicle seizure
- Allow courts to order Ignition Interlock Devices as a condition for license reinstatement.
- Monitor all convicted OWI offenders closely.
- Penalty enhancers for high-BAC offenses and OWI offenses with minor children in the vehicle
- Incarcerate repeat offenders.

The answer to Wisconsin's impaired driving challenge is not to simply do more new things that have not already been tried, particularly things that have not proven effective in other states. Wisconsin is already doing most of the things that national experts recognize as the right things to do, plus a number of other things that are not on the list, which reflect a progressive, innovative, "outside the box" approach to reducing impaired driving. For example, Wisconsin,

- Is one of only 12 states with a per se law against driving with a controlled substance;
- Applies a very low alcohol limit (0.02) for offenders with three or more prior convictions;
- Revokes work release privileges for incarcerated offenders who do not fully comply with their court-ordered driver safety improvement plans;
- Provides state funding for safe ride programs administered by the hospitality industry;
- Provides federal funding for an innovative program to change social norms by providing safe rides to and from bars;
- Provides federal and state funding for local pre-trial intervention programs for repeat offenders; and
- Is one of the few states that aggressively sought and won federal Department of Justice funding for addressing underage offenders.

Wisconsin is already doing many of the "right" things. The department has studied various dimensions of the impaired driving issue, and the state already has relatively strong laws to deter

impaired driving. In addition, the prosecution of drivers arrested for impaired driving is relatively swift and certain, as reflected in Wisconsin's 92% conviction rate.

Since the early 1990s, two Governor-appointed task forces on repeat OWI offenders have been convened. In response to legislative mandates, the department has studied alternatives to incarceration for repeat offenders and the efficacy of passive alcohol sensors for detecting drivers with low BAC levels. In 2002, the department hosted a regional conference of advocates and professionals to share best practices and to brainstorm new solutions to lingering problems. In 2003, the department invited a peer review of Wisconsin's impaired driving programs, the second such assessment since the first one in 1994.

Since Wisconsin is already doing most of the "right" things - and since there are no obvious "silver bullets" to add to the state's impaired driving toolbox - rather than continued experimentation and searching for as yet untried or to date under-emphasized activities, the department will pursue two key focus areas to further reduce impaired driving:

1. *Sustain current levels of effort and, where feasible, increase resources for doing what works best by protecting and pursuing available state and federal funding.*
2. *Identify and remedy obstacles to the successful detection, arrest, prosecution and treatment of impaired drivers, and to increased public awareness of the social costs and consequences of impaired driving.*

Performance Goal and Performance Measures

Goal: Decrease the number of deaths resulting from alcohol and drug related motor vehicle crashes to 300 deaths by 2008.

Performance Measures

- Reduce alcohol- and drug-related motor vehicle crashes to 8,750 in 2006 and 8,600 in 2008. (*2004 baseline was 8,931)*
- Reduce resulting deaths and incapacitating injuries to 1,357 in 2006 and 1,257 in 2008. (*2004 baseline was 1,457)*
- Reduce the proportion of fatal crashes that are alcohol or drug related to 35% of all crashes in 2006 and 30% in 2008. (*2004 baseline was 42% of all crashes)*

Challenges

Focus Area 1: Protect/pursue available state and federal funding

- Lack of control over pressure on the Legislature to weaken state impaired driving laws or programs that would jeopardize eligibility for federal funds.

Focus Area 2: Successful detection, arrest, prosecution and treatment of impaired drivers and increased public awareness of the social costs and consequences of impaired driving

- Inadequate interagency communication/cooperation among state agencies with mutually exclusive responsibilities for dealing with impaired drivers.
- Funding/staffing constraints and competing priorities for state and local traffic law enforcement agencies.
- Recent DMV database re-design and staffing constraints impede annual publication of statistical summaries of the nature and extent of impaired driving.

Strategies for the future - short-term and long-term

Focus Area 1: Protect/pursue available state and federal funding

- Create a permanent OWI Task Force to provide advice and counsel to the Governor, the department, and other interested parties.
- Oppose any changes in state law that would disqualify Wisconsin from receiving federal highway safety funds; e.g., attempts to weaken the 1st offense 0.08 per se law by not counting prior 0.08-0.09 offenses for purposes of defining repeat OWI offenders or attempts to "fix" mandatory driver license suspension periods that are perceived to impede greater deployment of ignition interlock devices.
- Maintain current levels of programming effort necessary to qualify Wisconsin for federal Section 410 funding.
- Propose/support changes in state law or agency programming that would qualify Wisconsin for additional federal highway safety funds.
- Propose/support provisions in the 2007-09 biennial state budget to provide funding or revenue generators to sustain/expand existing initiatives or for new initiatives.
- Increase efforts to encourage private and non-profit partners at the state and local level to expand financial contributions to successful and/or innovative impaired driving countermeasure programs.
- Better understand the revenue stream generated by Wisconsin's $355 OWI surcharge by updating the department's mid-1990s survey of clerks of court to determine the rate of non-payment by OWI offenders.

Focus Area 2: Successful detection, arrest, prosecution and treatment of impaired drivers and increased public awareness of the social costs and consequences of impaired driving

- Create a permanent, multi-disciplinary OWI Task Force to provide advice and counsel to the Governor, the department, and other interested parties.
- Oppose any change in state law that would disqualify Wisconsin from receiving federal highway safety funds.
- Propose/support provisions in the 2007-09 biennial state budget to provide funding or revenue generators to sustain existing initiatives; e.g., Pre-trial Intensive Supervision grant program, Safe Ride grant program.
- Support legislation that would create a more direct revenue incentive for local law enforcement to make OWI enforcement a high priority; e.g., 2005 AB-237 would have increased the OWI Surcharge by $100 with the new revenue going to the arresting agency.
- Keep impaired driving as a high priority program area in the department's annual allocation of federal safety program funds.
- Develop a statewide comprehensive public information and education campaign on impaired driving.

Implemented strategies: 2001–2005

Focus Area 1: Protect/pursue available state and federal funding

- Supported enactment of 2001 Wisconsin Act 16 to come into compliance with federal Section 164 mandate regarding minimum penalties for repeat drunk drivers.
- Actively opposed several bills that would lower the minimum drinking age from 21 to 19, which would have brought Wisconsin into non-compliance with federal Section 158 mandate regarding the MDA and/or federal Section 161 mandate regarding zero tolerance for persons under age 21.
- Supported state budget initiative in 2001 that increased funding for the department's grant program to start/sustain pre-trial intensive supervision programs for repeat offenders.

- Supported state budget initiative in 2003 that created a revenue stream for the department's grant program to start/sustain Safe Ride programs.

Focus Area 2: Successful detection, arrest, prosecution and treatment of impaired drivers and increased public awareness of the social costs and consequences of impaired driving

- Held peer assessment of Wisconsin's Impaired Driving Program in 2003.
- Participated in national traffic safety campaigns through annual statewide Labor Day law enforcement mobilizations focused on impaired drivers.
- Supported enactment of 2003 Wisconsin Act 30 (0.08 AC limit for 1st and 2nd offenders).
- Supported enactment of 2003 Wisconsin Act 97 (per se limit for drugs other than alcohol).
- Sustained/expanded the Drug Recognition Expert training for law enforcement and coordinated transfer of responsibility for DRE program to Department of Justice/Law Enforcement Training and Standards Bureau.

Issue Areas 6 and 9: Keep Vehicles on the Road and Minimize Consequences of Leaving the Roadway

Background

In the process of determining safety improvements that will help keep errant vehicles from leaving the road and to minimize the consequences of running off the road, state statistics from 2004 were reviewed. It was found that 32,000 crashes involved either hitting fixed objects or overturning after leaving the roadway. Those crashes accounted for 280 fatalities out of the 714 that occurred in 2004 (almost 40%). In addition, 250 of the 280 fatalities (nearly 90%) occurred in rural areas. Furthermore, most of these crashes occurred when the pavements are tangent and dry. There is no conclusive link between OWI and run-off-the-road (ROR) fatalities that can be established from WisDOT data.

WisDOT needs to develop a decision support system that will help locate sections of highways where there is a high likelihood of these ROR crashes occurring. WisDOT staff has begun some work aimed at modeling these probable locations, as will be described in the next sections of this report, but much more needs to be done.

This initiative includes three key focus areas:

1. *Develop data support systems.*
2. *Decision support systems for locals.*
3. *Develop and implement potential solution strategies.*

Mainline Crash Rate Summary for Wisconsin

Year	Overall	ROR	Ratio*
1998	126.3	47.4	38%
1999	130.9	46.7	36%
2000	133.7	52.3	39%
2001	132.3	50.0	38%
2002	142.9	56.4	39%

*Crashes/100MVMT, crashes are non-intersection and mainline only

Performance measures

- Reduce five-year-average head-on/opposing-direction lane departure crashes by 10% by 2008.
- Reduce five-year-average run-off-the-road crashes by 10% by 2008.
- Reduce the number of fatal and incapacitating injury run-off-the-road crashes by 10% by 2008.

Challenges

Focus Area 1: Develop data support systems

- Lack of time to devote to the project or development of unique features.
- Interagency outreach, collaboration and coordination requires time and effort.
- In-house resources strained to develop or purchase modeling software.

Focus Area 2: Develop a data gathering mechanism and decision support system to help assist locals

- Cross agency coordination and collaboration (need up-front buy-in).
- Resources necessary to provide a usable product.
- Resources needed to develop and provide training.

Focus Area 3: Develop and implement potential solution strategies

- Creating organizational commitment.
- Resources needed for deployment.
- Developing institutional support throughout the agency and with partners.

Strategies for the future – short term

Focus Area 1: Develop data support systems

- Enhance and implement the run-off-the-road analysis tool referred to in the implemented strategies.
- Upon completion, integrate the run-off-the-road tool into state planning and programming processes and at the design level, i.e. to set the right improvement type.

Focus Area 2: Develop a data gathering mechanism and decision support system to help assist locals

- Encourage and assist locals in data collection and maintenance.
- Develop a training program for local use of the run-off-the-road tool.
- Provide necessary support to facilitate the technology transfer to the locals.

Focus Area 3: Develop and implement potential solution strategies

- Develop a comprehensive program to improve driver guidance on the STH system.
- Effectively communicate the program objectives.
- Develop better guidance to control speed variance through a variety of techniques.
- Improve the design process to explicitly incorporate safety.

Strategies for the future – long term

Focus Area 1: Develop data support systems

- Develop and maintain an inventory system of roadside geometry, e.g. available lateral clearance, backslope, shoulder type, width, etc.
- Refine the WisDOT asset management program COMPASS.

Focus Area 2: Develop a data gathering mechanism and decision support system to help assist locals

- Update the inventory system of roadside geometry at a reasonable interval.
- Develop a way to integrate the decision support system into the safety decision-making process.
- Assist locals in accomplishing this goal, especially through training.
- Require training for any tool developed for the locals through WisDOT.

Focus Area 3: Develop and implement potential solution strategies

- Effectively communicate program results.
- Implement comprehensive programs to improve driver guidance.
- Implement ways to address roadside hazards to mitigate ROR consequences.
- Establish programs to improve roadway maintenance to enhance safety.

- Develop specific treatments to minimize ROR consequences such as trees in the clear zone or evaluating front slopes to reduce the distance errant vehicles travel once they leave the roadway.

Implemented strategies: 2001 - 2005

Focus Area 1: Develop data support systems

- Researched a run-off-the-road assessment tool for the STH system. (*BHO, Marquette University*)
- Develop more effective decision support to identify programmatic improvements. (*BHO*)
- Integrate signing and marking management systems (SIMS and MIMS) to support crash reduction (*BHO*)
- Investigate use of the run-off-the-road tool for streets and highways, e.g. safe urban streetscape design. (*BPD, BHO*)

Focus Area 2: Develop a data gathering mechanism and decision support system to help assist locals

- No strategies implemented at this time.

Focus Area 3: Develop and implement potential solution strategies

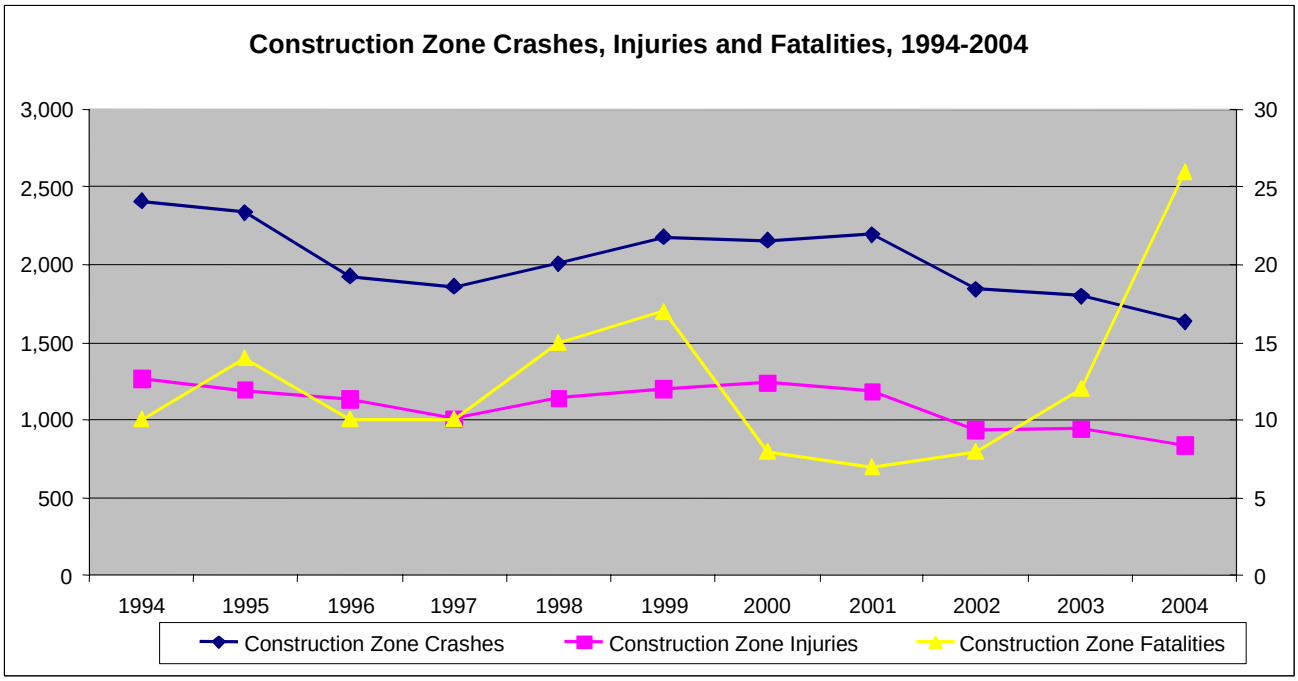
- Develop a coordinated action plan. (*BHO*)
- Complete the run-off-the road crash study. (*BHO, Marquette University*)
- Determine the role of WisDOT in implementing Phase II of NCHRP Report 500. (*BHO*)

Issue Area 7: Design Safer Work Zones

Background

Highway work zones create a major safety concern for motorists and construction and maintenance workers alike. In 2004, there were 1,639 crashes in work zones on Wisconsin highways. These crashes resulted in 26 fatalities and 839 injuries. Data indicate that work zone fatalities occur in every functional highway classification. The ten-year construction zone crash trend shows that while the annual number of work zone crashes has declined, the number of fatal crashes in work zones has increased. Work zones require increased attention because motorists are often faced with unique situations requiring special care. Increasing traffic volume on an aging highway network necessitates the need for more work zones in the future. The increase in resurfacing and reconstruction projects requires the department to ensure that the safety of work zones is addressed. This initiative includes three focus areas:

1. *Adopt improved procedures to ensure effective practices for managing work zone operations.*
2. *Enhance and extend training for the planning, implementation and maintenance of work zones to maximize safety.*
3. *Enhance the safety of work zone driving through education and enforcement actions.*



Performance measure

- Reduce five-year-average work zone fatalities and incapacitating injuries by 25% by 2008.

Challenges

Focus Area 1: Adopt improved procedures to ensure effective practices for managing work zone operations

- Increasing need for road repair and construction along with increasing traffic volumes makes it more difficult to schedule road work and closures while maintaining mobility and safety.
- Consensus on a policy on work zone safety, mobility and mitigation strategies can be difficult to achieve.
- Limited resources to conduct work zone traffic impact analyses.
- Additional funding needed for alternative project staging/scheduling, mitigation and traffic control devices.

Focus Area 2: Enhance and extend training for the planning, implementation and maintenance of work zones to maximize safety

- Need to reach a large number of engineering staff, managers and workers in a wide range of settings (WisDOT regions, consultants, counties, contractors).
- Developing and offering training on federal work zone rules will require significant resources.

Focus Area 3: Enhance the safety of work zone driving through education and enforcement actions

- Funding reduced for work zone public awareness efforts.
- Need data and collection tools and staff resources to evaluate and determine appropriate levels of work zone traffic enforcement.

Strategies for the future - short-term

Focus Area 1: Adopt improved procedures to ensure effective practices for managing work zone operations

- Develop Lane Closure Map and Guidelines for freeway and expressway system statewide.
- Pilot broader use of work zone management and traveler information systems.
- Develop policies and processes to comply with federal work zone rules:
    - Work Zone Impact Analysis criteria, methods and tools;
    - Development of Transportation Management Plans, including staging methods and strategies to mitigate impacts; and
    - Evaluation of work zone performance and Transportation Management Plans.

Focus Area 2: Enhance and extend training for the planning, implementation and maintenance of work zones to maximize safety

- Identify and develop work zone safety and mobility training needs and processes.
- Conduct Work Zone Safety Training and Awareness Event in March 2006.
- Provide training on lane closure and portable changeable message sign guidelines.

Focus Area 3: Enhance the safety of work zone driving through education and enforcement actions

- Update guidelines, criteria and processes for work zone traffic law enforcement.
- Deploy pilot projects sponsored by Work Zone Management and Safety Advisory Group to collect traffic data and evaluate effectiveness of enforcement and traffic control.

Strategies for the future - long-term

Focus Area 1: Adopt improved procedures to ensure effective practices for managing work zone operations

- Update Facilities Development Manual for new work zone guidelines and processes.
- Apply low cost traffic calming devices in work zones.

- Implement cross agency pre-planning during project development phase.
- Develop guidelines for supplemental signing of work zone traffic law violations.
- Develop an online Lane Closure Permitting System.

Focus Area 2: Enhance and extend training for the planning, implementation and maintenance of work zones to maximize safety

- Provide training on updated Facilities Development Manual guidance, work zone impact analyses, and management plans.
- Incorporate work zone training into Traffic Engineering Services Certification Program.

Focus Area 3: Enhance the safety of work zone driving through education and enforcement actions

- Develop more aggressive, innovative work zone public awareness campaign.
- Evaluate new work zone traffic law enforcement criteria and processes.
- Adopt strategies listed in NCHRP Report 500 guidebook as appropriate for Wisconsin.

Implemented strategies: 2001-2005

Focus Area 1: Adopt improved procedures to ensure effective practices for managing work zone operations

- Conducted evaluations through Smart Work Zone pooled fund and UW Traffic Operations and Safety (TOPS) Laboratory of work zone portable traveler information systems, temporary rumble strips and flagger paddles. *(UW, UWM, MU, BHO)*
- Completed FHWA value engineering study of congestion, including work zone action plan recommendations. *(FHWA, BHO, BPD, Regions)*
- Work Zone Management and Safety Advisory Group formed. *(UW, BHO, BPD, Regions, FHWA, DSP, OPA, WTBA, WCHA, AAA, WMCA)*
- Published 30-minute maximum work zone delay guideline in Facilities Development Manual. (*BPD, BHO)*
- Implemented lane closure guidelines and work zone analysis procedures in Southeast Region. *(TOC)*
- Implemented crashworthy traffic control device standards for construction and maintenance projects, including state-of-the-art crash-tested approved temporary concrete barrier. *(BHO, BPD, Regions, FHWA)*

Focus Area 2: Enhance and extend training for the planning, implementation and maintenance of work zones to maximize safety

- Enhanced UW Transportation Information Center work zone training to include WisDOT project standards and guidelines. Conducted six sessions in Regions from 2002-2004. *(UW TIC, BHO)*
- Conducted FHWA “Making Work Zones Work Better” workshop in February 2004 and Work Zone Safety “Call to Action” workshop in April 2005. *(UW, BHO, FHWA)*

Focus Area 3: Enhance the safety of work zone driving through education and enforcement actions

- Continued efforts to improve public awareness of work zone safety through annual Travel Easy brochure, Wisconsin Broadcasters’ Association radio announcements statewide and television spots in selected markets. *(OPA)*
- Work Zone Management and Safety Evaluation initiative through UW TOPS Lab included evaluations of radar speed display and enforcement strategies in 2005. *(UW)*

Issue Area 8: Reduce Head-On and Cross-Median Crashes

Background

Head-on and Cross-Median Crashes (CMS) are two types of crashes that can result in fatalities and severe injuries. These are usually caused by either vehicular deviation over the centerline on two lane roads or loss of vehicular control and crossing the median, potentially resulting in a head-on crash in the opposite lane of a divided highway. Although there is a seeming randomness to two-lane road head-on and divided-highway crossover crashes, there are sufficient numbers to warrant an attempt by engineers and safety practitioners to identify patterns, circumstances or conditions that may create a propensity for these crashes to occur under certain circumstances.

This initiative includes three key focus areas:

1. *Continual collection of data and refinement of on-going median crossover investigations.*
2. *Further refinement of the run-off-the-road tool to analyze two-lane road head-on crashes.*
3. *Develop and implement potential solution strategies.*

Median Crossover Crashes by Crash Severity (2001-2003)

Crash Severity	***Crashes***
Property Damage Only	254 (40.3%)
Personal Injury	336 (53.2%)
Fatal	41 (6.5%)
Total	**631 (100.0%)**

Performance measure

- Reduce cross-median fatal and incapacitating injury crashes by 10% by 2008.

Challenges

Focus Area 1: Continual collection of data and refinement of on-going median crossover investigations

- Lack of time to devote to the project or development of unique applications.
- Data gathering requires investment of scarce departmental resources and time over which to develop a usable database for modeling.
- In-house resources strained to develop or purchase modeling software.

Focus Area 2: Further refinement of the run-off-the-road tool to analyze two-lane road head-on crashes

- Data gathering and analysis techniques.
- Resources necessary to provide a usable product.
- Resources needed to develop a usable database.

Focus Area 3: Develop and implement potential solution strategies

- Prioritizing which projects to pursue when resources are not sufficiently available to move forward on addressing the full spectrum of needs.
- Integrating the projects into the mainstream programs.

Strategies for the future – short term

Focus Area 1: Continual collection of data and refinement of on-going median crossover investigations

- Continue crash review and data gathering for median crossover crashes.
- Complete data gathering to build a five-year database.
- Utilize the UW-TOPS Lab to complete and maintain identification of high hazard cross-median crash locations.

Focus Area 2: Further refinement of the run-off-the-road tool to analyze two-lane road head-on crashes

- Continue crash review and data gathering for head-on collisions on two lane roads.
- Complete data gathering to build a five-year database.
- Start to develop a design process to mitigate geometric situations that may be factors in two-lane road head-on collisions.

Focus Area 3: Develop and implement potential solution strategies

- Develop an action plan for strategic implementation based on NCHRP 500.
- Adapt the appropriate strategies identified in NCHRP 500 for Wisconsin.
- Develop design standards for retrofit median improvements in likely crash locations.
- Start development of a design process to determine median barrier type for high probability crash locations.
- Develop policy on barrier type selection and appropriate use.

Strategies for the future – long term

Focus Area 1: Continual collection of data and refinement of on-going median crossover investigations

- Continually update and refine median crossover issues and the environment.
- Develop and maintain an inventory system of roadway geometry and conditions likely to cause lane deviation on divided highways.

Focus Area 2: Further refinement of the run-off-the-road tool to analyze two-lane road head-on crashes

- Develop and maintain an inventory system of roadway geometry and conditions likely to cause lane deviation on two-lane roads.
- Implement the short-term strategies relating to mitigation strategies for two-lane road head-on collisions.

Focus Area 3: Develop and implement potential solution strategies

- Conduct an economic analysis of implementation costs of potential strategies.
- Implement short-term strategies relating to development of design standards for median barriers.
- Finalize and implement policies relating to barrier type selection and use.
- Develop a logical and defensible program methodology for funding and implementing solutions such as high tension median cable barrier systems.
- Develop a centerline treatment design to reduce head-on crashes on two lane roads and incorporate the standards in the FDM.

Implemented strategies: 2001-2005

Focus Area 1: Continual collection of data and refinement of on-going median crossover investigations

- Initial data have been collected and the "Median Crossover Crashes and CODES Data Analysis" report has been published through the UW TOPS laboratory. (*BHO, UW*)
- Refined the collection of data relating to the ongoing UW investigation of median crossovers. (*BHO, UW*)

Focus Area 2: Further refinement of the run-off-the-road tool to analyze two-lane road head-on crashes

- Developed consistent strategies to minimize and reduce head-on crashes; e.g., the Highway 12 Safety Study. (*BPD, BHO*)

Focus Area 3: Develop and implement potential solution strategies

- Developed strategies to mitigate the CMC on a selective basis of STH segments. (*BPD, BHO*)
- Developed strategies to reduce the number and severity of cross median crashes. (*BPD, BHO*)
- Developed centerline treatment strategies to reduce head-on crashes on rural roads. (*BPD, BHO*)
- Piloted centerline rumble strips technique on STH 192 and edgeline rumble strip technique on I-39.
- Implemented the barrier treatments on selective STH segments such as USH 41 Fond du Lac County, IH 43 Ozaukee County and others.
- Developed/updated more economical and durable centerline tape, including wet weather tape.

Issue Area 10: Increase Driver Safety Awareness

Background

Strong and effective informational and motivational traffic safety messages can help drivers comprehend both intellectually and emotionally the need to make rational and responsible choices regarding their driving habits and behavior. The majority of traffic safety messages and themes, both nationwide and in Wisconsin, continue to focus on:

- Reducing speeding and driving too fast for conditions;
- Reducing driving while impaired by alcohol or other drugs; and
- Increasing safety-belt use, which is well behind the national average in Wisconsin.

These three areas must be emphasized continually because of their tragic consequences. For instance, in 2004 of the 784 people killed in traffic crashes in Wisconsin:

- 42% died in alcohol-related crashes;
- 33% died in speed-related crashes;
- 19% died in crashes that involved both alcohol and speed; and
- 59% of persons killed in car and light-truck crashes were not using safety belts

Other areas that also need to be addressed continually include:

- Inattentive and distracted driving;
- Aggressive driving;
- Speeding, following too close, and other reckless driving behavior in work zones;
- Failure to “move over” for law enforcement and emergency vehicles parked on roadways;
- Motorcycle safety;
- Vehicle collisions with deer; and
- Sharing the road with bicyclists and pedestrians.

Increasing driver safety awareness permeates all the goals outlined in the Strategic Highway Safety Plan and must be integrated into the planning and implementation of all traffic safety efforts.

Performance measures

- Using surveys conducted under the supervision of the Bureau of Transportation Safety before and after the National Highway Transportation Safety Administration (NHTSA) sponsored law enforcement/public education mobilizations, increase awareness of the safety belt and alcohol impaired driving safety messages by 5 percent each year from a baseline established in 2006.
- Increase visits to WisDOT Web site safety pages by 5 percent each year by providing new and relevant content.
- Monitor earned media placements (safety messages and reports published or broadcast free of charge) and increase frequency of earned media placements by 2 percent annually.

Challenges

- Effectively communicating safety messages to a growing Latino population in Wisconsin and other ethnic groups whose primary language is not English.
- Obtaining funding and personnel resources for statewide traffic safety media campaigns.

- Keeping pace with rapidly changing telecommunications and Internet technologies that affect information delivery.
- Lack of resources and expertise to evaluate definitively the effectiveness of various traffic safety messages in changing drivers' behaviors.

Strategies for the future - short-term

- Create powerful safety messages and campaigns that inform and motivate drivers to improve their habits and behavior while behind the wheel.
- Refine and enhance delivery of traffic safety messages via mass media.
- In messages to the media and the public, continue to define traffic crashes as preventable events and not as "accidents."
- Expand and strengthen partnerships with traffic safety agencies and organizations involved in media campaigns.
- Continue driver safety awareness collaborations with groups participating in the Latino and African-American Traffic Safety Summits.
- Provide media training for more WisDOT traffic safety staff, so they can effectively communicate traffic safety messages.

Strategies for the future - long-term

- Learn from other public awareness and education campaigns, like anti-smoking efforts, that have been successful in promoting widespread and long-lasting positive behavioral changes.
- Take advantage of technology advances in communications to customize and focus safety messages to various demographic groups.
- Strengthen partnerships with other agencies to establish more comprehensive traffic safety awareness strategies and campaigns.

Implemented strategies: 2001-2005

- The State Patrol Bureau of Transportation Safety (BOTS) and other WisDOT staff provide information and interviews for the media nearly everyday. A media analysis in 2003 showed safety to be the second highest category of WisDOT media contacts (highway construction was the highest).
- WisDOT distributed news releases, organized news conferences and other media activities related to safety themes and messages, which included:
    - Deer crash reduction efforts;
    - Monthly traffic fatalities;
    - Child safety restraints;
    - One-year anniversary and analysis of 0.08 law; and
    - Three-year analysis of the graduated drivers license law.
- To address increases in motorcyclist fatalities, the Bureau of Transportation Safety and State Patrol officers participated in motorcycle events and rallies to demonstrate safe riding techniques and present safety information.
- The State Patrol Law of the Month news releases addressed traffic safety regulations.
- The WisDOT weekly radio NewsLine covered traffic safety issues. This service also provided audio clips on the department's Web site.
- WisDOT Secretary Frank Busalacchi produced letters to the editor and commentary columns advocating traffic safety awareness.
- *Click It or Ticket a*nd *You Drink & Drive. You Lose* were NHTSA-sponsored campaigns combining paid television, radio and print advertisements, along with public information

efforts. WisDOT Secretary Busalacchi approved the use of the national themes. (Wisconsin previously used its own themes). National surveys have shown that consistent branding can help create greater awareness.

- Special traffic law enforcement campaigns were highlighted in the media, including intensified and high-visibility enforcement during holiday periods on the interstates, US 41 in the Fox River Valley, and US 53 in northwest Wisconsin. In addition, the State Patrol participated in a highly publicized speed and aggressive driving enforcement detail on the heavily traveled "Beltline" highway in the Madison area in 2005. In the month following this effort, average speeds on the Beltline showed a significant decline.
- Winter driving safety messages educated drivers on how to maintain control of their vehicles and avoid crashes during bad weather and road conditions. The messages also warned drivers of the legal requirement to stay back 200 feet from working snowplows.
- Work Zone Safety Awareness efforts educated the public on the location of work zones and precautions needed to navigate through them.
- WisDOT participated in the AAA Wisconsin Road Improvement Demonstration Project media event in Milwaukee to launch this public-private partnership to improve traffic safety at high-crash intersections.
- WisDOT collaborated with the Enhanced Mobility Coalition and other safety groups to promote the Traffic Signing and Marking Enhancement Grant Program, which funds projects that enhance the visibility of traffic signs and roadway markings to assist older drivers and pedestrians.
- WisDOT sponsored "Rhyme for Safety Showcase" campaign focused on safety belt use among inner city Milwaukee youth. High school students submitted original poems, songs or messages about the importance of safety belt use. The winning entry was a rap-style song that was used as a public service announcement.
- WisDOT purchased $50,000 in radio commercials on the 2005 Badger football game broadcasts to air highway safety messages.
- The Bureau of Transportation Safety produced and distributed the Traffic Safety Reporter newsletter, a quarterly publication that profiles issues for transportation safety advocates.
- The Bureau of Transportation Safety published the Wisconsin Traffic Crash Facts and the Alcohol Traffic Crash Facts reports, which contain data for use by traffic safety advocates and policymakers. These publications and other information are available on the department's Web site under a special safety section.
- The State Patrol published a pamphlet with traffic safety and other information that is given to each motorist stopped by the State Patrol.
- Coordination was improved between the Bureau of Transportation Safety and the Office of Public Affairs by moving the State Patrol communication specialist position into the Office of Public Affairs.

Part III:
Continuing Safety Issue Areas
Issue Areas 11-26 Summary

In 2004, the TSC rated 26 highway safety issue areas on two dimensions: highway safety importance and WisDOT's ability to improve or influence the problem. The top 10 issue areas were chosen based on high rankings in both areas, and action teams were assigned to continue progress in these areas. Although the 16 issue areas on the following pages were not ranked among the top 10, they represent significant safety issues identified by TSC workgroups. WisDOT continues to devote resources to addressing these issues, and this section summarizes activities and progress in these areas.

Issue Area 11: Sustain Proficiency in Older Drivers

Related Activities:

- DMV Bureau of Driver Services (BDS) offers a wide variety of products and services that benefit older drivers (e.g. a large print condensed version of the motorist handbook, audio handbook, issuing restricted/limited area licenses, networking with statewide organizations and advocates to identify/meet the needs of aging drivers). The BDS nurse consultant does outreach to senior groups, health care professionals, support groups, health organizations, family members and law enforcement.
- In February 2003, staff from DMV-BDS participated in a NHTSA sponsored conference on developing a Physicians Guide to Assessing and Counseling Older Drivers, which was produced and supplied to all American Medical Association Members in September of that year.
- In March of 2006, staff from DMV-BDS attended and presented at the AAMVA (American Association of Motor Vehicle Administrators) sponsored "Challenging Myths and Opening Minds: Aging and the Medically At-Risk Driver Forum," which included presentations/speakers from renowned aging driver researchers, other state motor vehicle personnel and representatives from various provinces in Canada. In addition, new driver screening tools/technology were presented including cognitive assessment tools, simulators and the use of certified driver training rehabilitation specialists by state agencies. An overview of this forum and options for WisDOT was presented to DMV field and driver services managers.

Issue Area 12: Insure Drivers are Licensed and Competent

Related Activities:

- DMV Bureau of Driver Services provides an array of driver licensing and control functions that are designed, collectively, to insure drivers are licensed and competent. These include licensing requirements (testing, retesting, operating restrictions), license withdrawals due to violations or disqualification, license reinstatement, and driver improvement programs.
- In 2003, as directed by 1999 Wisconsin Act 109, BOTS staff completed a comprehensive review of the effectiveness of ignition interlock devices and vehicle immobilization as court-ordered vehicle sanctions for repeat drunk drivers. The report was published on-line at: http://www.dot.wisconsin.gov/library/publications/topic/safety/iid-report.pdf
- In 2004, DMV cooperated with municipal judges in the City of Milwaukee on an amnesty program designed to restore drivers who were suspended due to failure to pay forfeitures to full license status.

Issue Area 13: improve Motorcycle Safety

Related Activities:

- Since the mid-1990s, BOTS staff have published the annual Wisconsin Motorcycle Safety Facts Book, which is a statistical digest of motorcycle information. The report is published on-line at: http://www.dot.wisconsin.gov/safety/motorist/crashfacts/docs/motorcyclefacts.pdf
- In 2003, BOTS staff held two summit meetings with leaders of the state's motorcycling community to discuss the alarming increase in motorcyclist fatalities.
- In 2004, BOTS staff organized the first-ever state level conference on implementing elements of the National Agenda for Motorcycle Safety. A strategic action plan to follow through on related initiatives was developed in summer 2004. The plan was published on-line at: http://www.dot.wisconsin.gov/library/publications/topic/safety/motorcycleplan.pdf
- At several motorcycle rallies across the state in 2004, DSP troopers assigned to motorcycle patrol gave demonstrations on crash avoidance. BOTS provides some funding to local law enforcement agencies to supplement officer availability during times of several large motorcycle rallies.
- In 2004, enrollment in the Basic Rider Education course (sponsored by BOTS, but taught by instructors at Wisconsin Technical College System campuses) increased by more than 1,000 students over 2003 enrollments.
- A NCHRP-sponsored research project is evaluating the safety effects of rumble strips for motorcycle operation.

Issue Area 14: Curb Aggressive Driving

Related Activities:

- In 1998-2000, a cross-divisional work group of WisDOT staff, in concert with representatives from local law enforcement and others with an interest in the topic, formed the "Road Rage Task Force." The task force sponsored a baseline survey of Wisconsin drivers on their attitudes and self-reported behaviors associated with aggressive driving. The DSP and over 60 local law enforcement agencies participated in a special data collection study, using the special studies portion of the MV4000 uniform traffic accident report form, to collect baseline data on aggressive driving crashes.
- In 2000, BOTS sponsored the statewide "Let It Ride" public information/education campaign, which encouraged drivers to control their responses to driving-environment conditions that can trigger aggressive behavior.
- In 2000, as part of the Road Rage Task Force effort, BOTS developed a performance measure for aggressive driving, based on the annual number of citations entered on the DMV Driver Record File for a select list of traffic violations. [*In 2003, aggressive driving-related convictions represented 33.9% of all traffic-related convictions – the lowest proportion recorded since detailed conviction data became available in 1970*.]

Issue Area 15: Improve Traffic Incident Management

Related Activities:

- Since 1995, the southeastern Wisconsin Traffic Incident Management Enhancement (TIME) Program has served as a national model for sustained and structured partnerships between the transportation and public safety communities, and the public and private sectors. Highly successful freeway safety patrol models have been implemented in Milwaukee, Waukesha, Racine and Kenosha Counties through the TIME Program to reduce secondary crashes, avoid traffic incident delay, and improve the safety of emergency responders.

- The TIME Program has piloted a county highway maintenance emergency traffic management initiative known as the Traffic Response Unit (TRU). The TRU vehicle is a rapid response resource to provide traffic control in support of emergency responders on high-speed freeways. This responsive emergency traffic management capability supplements the regional MONITOR Freeway Traffic Management System, which uses CCTV surveillance, traffic detectors, ramp meters, permanent electronic Dynamic Message Signs, Highway Advisory Radio, and broadcast traffic media partnerships to optimize traffic safety on the Southeastern Wisconsin Freeway System.
- The Southwestern Wisconsin Intelligent Transportation System (SWITS) Program has piloted similar freeway safety patrol programs on the Beltline (USH 12/14/18/151) in Madison. SWITS has also led the state in establishing a methodology and approach for planning and implementing emergency alternate routes to improve traffic safety during partial or full freeway closures. These initiatives have included the testing of a "Blue Route" alternate route concept along I-39/90/94 in the Madison area.
- DTD Green Bay District (now DTSD Northeast Region) has developed and administers county-wide traffic incident management programs in three "Fox Cities" counties along the USH 41 Corridor. These programs support critical incident debriefings, alternate route planning, and traveler warning and information services through Portable Changeable Message Signs (PCMS).
- DTD Wisconsin Rapids District (now DTSD Northcentral Region) is implementing a work zone traffic incident management program in conjunction with the STH 29 "Bypass" Freeway Reconstruction Project in Wausau.
- The first statewide Traffic Operations Plan (TOP) is under development by DTSD-Bureau of Highway Operations. A corresponding Traffic Operations and Public Safety Interoperability Study (TOPSIS) is providing insights into traffic incident management operational practices, as well as functional and system requirements for interoperable communications and data sharing network capabilities. TOP and TOPSIS will provide highway corridor operations infrastructure development recommendations for consideration within the Connections 2030 Long Range Transportation Plan.
- Statewide ITS Software is being updated, and the DSP Computer-Aided Dispatch System is becoming operational. Program planning is being completed for Wisconsin's component of the National 5-1-1 Traveler Information System. These capabilities will enable improved traffic incident detection and more effective and timely traveler warning and information services – particularly on Wisconsin's freeway and expressway "Backbone" system.

Issue Area 16: Drive More Safely in Inclement Weather

Related Activities:

- Following a 10-fatality crash in foggy conditions on I-43 in Sheboygan County in October 2003, DTID (now DTSD) staff conducted a long-term trend analysis of all crashes that occurred during times of reduced visibility in the I-43 Milwaukee-Green Bay corridor.
- In May 2004, in cooperation with FHWA, the TOPS Lab hosted the 2nd National Highway Visibility Conference.
- In 2004, under a WisDOT work order, the UW-TOPS Lab completed a national scan of state-of-the-art road safety audit and road-weather management practices. The literature review report was submitted to WisDOT in February 2005.
- Under the same work order, in 2004, the UW-TOPS Lab distributed a request for information survey to all 50 states and most Canadian provinces. Only half of the agencies responded, probably because they had already responded to a recent survey conducted for NCHRP Synthesis 336 on road safety audits. In February 2005, the UW-TOPS Lab summarized their

survey results, in conjunction with results reported in Synthesis 336 and submitted the report to WisDOT Bureau of Highway Operations (BHO) for review.

- In parallel to the literature review and agency interviews, the UW-TOPS Lab is completing a customized Road-Weather Safety Audit (RWSA) feasibility study for WisDOT. The RWSA study includes institutional recommendations by incorporating the audit processes and procedures into the WisDOT facilities development process. The study also provides condition-specific countermeasures and strategies varying from low-cost treatment to more sophisticated systems. The safety checklists have been developed as part of the RWSA requirement to facilitate the conduction of a safety audit. The recommendations have been reported to the WisDOT BHO project team.
- Also as part of this project, Wisconsin weather-related crash data and weather event data have been compiled. A detailed safety analysis has been conducted to determine the potential crash risk factors that either directly contribute to or increase the likelihood of a crash occurrence during inclement weather conditions. The report has been submitted to WisDOT and the results were presented at the WisDOT BHO project team meeting and the Transportation Research Board annual meeting in early 2006.
- Another completed study, not under the same work order but also sponsored through WisDOT BHO, includes an evaluation of pavement skid friction under different weather conditions.
- Synthesizing the available information and results, the TOPS Lab is in the process of evaluating the entire state highway system for weather problematic locations, quantifying the magnitude of the existing safety deficiency and prioritizing candidate auditable sites. A proof of the concept will be demonstrated in late 2006 through a series of safety audits developed for: (1) existing roadways; (2) roadways being rehabilitated with minor geometric improvements; and (3) new or soon-to-be-reconstructed roadways while still in the planning/design phase.

Issue Area 17: Make Truck Travel Safer

Related Activities:

- *Size/Weight Enforcement:* The primary mission of the State Patrol inspection personnel is to insure that commercial carriers operate within statutory or permitted size (length, height, width) and weight limitations. Carriers are checked to make sure they have proper registration, fuel tax, insurance and authority credentials. Enforcement activities are conducted at State Patrol safety and weight inspection facilities as well as through mobile enforcement using portable scales.
- *Motor Carrier Advisory Council:* Since the early 1990s, DMV has consulted on a regular basis with an advisory council of representatives from the trucking industry (e.g. motor carriers, shippers, drivers, and truck stop operators). The Council has advised WisDOT on an array of topics, most of which address making the travel environment safer for commercial vehicle operations and all road users (e.g. large truck parking availability, Commercial Driver Licensing, hours of service reform, streamlining the oversize/overweight permitting process).
- *MCSAP Plan:* State Patrol inspection personnel conducted over 34,000 MCSAP inspections of large commercial vehicles in 2003. The State Patrol prepares an annual program plan for the agency's federally-funded Motor Carrier Safety Assistance Program (MCSAP) activities. The annual MCSAP plan is published on the WisDOT intranet.
- *CVISN:* WisDOT has been working for several years to implement a Commercial Vehicle Information Systems and Network to improve the agency's business functions related to screening motor carrier safety credentials and size/weight enforcement.

- *Improve and enhance truck safety data:* Wisconsin recently implemented the Aspen application as a means of collecting roadside inspection data. This will significantly improve the quality of the inspection data and the timeliness of uploading the information to federal databases.
- *Increase safety belt use among CMV operators*: Wisconsin received a special federal MCSAP grant to be used to establish a baseline of safety belt usage among its CMV operators within the state. The results of this survey will be utilized in developing future enforcement strategies. Education and outreach materials will also be distributed through various medias throughout Wisconsin.
- *Strengthen commercial driver's license (CDL) requirements and enforcement*: The State Patrol and Division of Motor Vehicles (DMV) currently conduct covert audits of its third-party testers. MCSAP also funds a full-time CDL auditor position within the DMV.
- *Increase enforcement activities related to traffic enforcement*: In response to crash data that suggested driver-related behavior significantly contributed to the cause of large truck crashes, the DSP implemented a special emphasis enforcement program that focused additional enforcement resources on behavior-related traffic violations during high crash periods.
- *New Entrant Program*: Title 49 CFR, Part 385 requires that all new motor carriers receive a New Entrant Audit (NEA) within the first 18 months of operation - preferably within the first 6 months of operation. Wisconsin continues to be a national leader in the New Entrant Program in an effort to reduce crashes by educating new carriers and assuring their compliance with the Federal Motor Carrier Safety Regulations (FMCSRs).

Issue Area 18: Institute Graduated Driver Licensing

Related Activities:

- In 2000, DMV implemented the phase-in of the new Graduated Driver License. The GDL law was designed to give new, young drivers a healthier, safer start to their driving career by requiring more practice time prior to getting a probationary license, restricting teen drivers from being on the road during late night hours, limiting the number of passengers riding with teen drivers, and allowing teen drivers a longer and safer driving experience before earning an unrestricted license.
- In August 2004, BOTS staff conducted a long-term trend analysis of crash involvement rates of teen drivers during the first three calendar years of the Wisconsin's GDL law (2001-03). [*The study indicated 15% fewer 16-year old drivers were involved in traffic crashes, 18% fewer were involved in fatal crashes and 20% fewer were involved in non-fatal injury crashes*.]
- More detailed analysis of the safety effects of the GDL law is in-progress by State Patrol staff.

Issue Area 19: Create More Effective Decision Processes/Safety Management Systems
[Traffic Safety Council decision on 10/7/04: This emphasis area should be paired up with #3: "Improve data and decision support systems"]

Related Activities

- In 2002-2003, a work group of DTD district (now DTSD region) staff completed a safety plan as part of the division's strategic business planning process. The group recommended that each district have a safety engineer with oversight responsibility for a coordinated safety program. Other recommendations addressed improvements in the data and analytical tools available to district staff, as well as improvements in procedures and programs using the data. DTD districts (now DTSD Regions) have implemented some of the recommendations

(e.g. placing a safety engineer in each district/region). Work on the remaining recommendations will be led by DTSD/Bureau of Highway Operations.

- In Summer 2003, WisDOT accepted an invitation to be a lead state in implementing NCHRP Report 501: "Integrated Safety Management Process." [*A total of 16 states are involved in this lead states initiative*.] On behalf of the Traffic Safety Council, State Patrol and UW-TOPS Lab staff attended the December 2003 meeting of ISMP lead states. The guest list for the 2004 meeting of ISMP lead states was expanded to include all interested state DOTs. As a consequence, 47 states were represented at a Kansas City conference in October 2004. DSP, DTSD/Bureau of Highway Operations), and FHWA/Wisconsin Division Office represented Wisconsin.
- In October 2003, DSP staff represented the department at the 2nd National Safety Leadership Conference. The forum was sponsored by the Safety Conscious Planning (SCP) Work Group, a coalition of federal, state and local transportation planners whose shared objective is to promote and monitor the development of analytical tools and decision processes designed to assist state DOT's and metropolitan planning organizations (MPOs) to more fully integrate safety into transportation project design and selection. In September 2004, Dennis Hughes and Doug Dalton (DTIM) attended the 3rd National Safety Leadership Conference on this topic.
- In Fall 2004, with support from DSP, staff in DTIM prepared briefing papers on a variety of traffic safety issues for consideration by the Connections 2030 (C2030) Steering Group. In November 2004, the WisDOT Traffic Safety Council participated in a stakeholder input/discussion session with C2030 staff.
- In December 2004, DTIM sponsored the 2-day FHWA training course on SCP. Participants were planning staff from Wisconsin's 13 MPOs, DTIM and DTD/District-1 (now DTSD), plus BOTS staff.
- With federal highway safety funding provided by BOTS, DTIM plans to host a statewide SCP forum. It will be modeled after similar forums held in a dozen other states, but the format and content will be tailored to best meet the needs of Wisconsin MPOs.

Issue Area 20: Make Walking/Street Crossing Safer

Related Activities:

- In 2002, DTIM produced the Wisconsin Pedestrian Policy Plan, as part of the agency's long-range Corridors 2020 transportation policy planning project. The plan was published on-line: http://www.dot.wisconsin.gov/projects/state/docs/ped2020-summary.pdf
- Detailed design, planning, and program information for pedestrian safety and mobility will be included in a best practices guide that will be published by DTIM.
- In May 2001, DTD, DTID (now DTSD) and DTIM staff attended the "Human Factors Workshop", an FHWA training course for engineering staff. The course content addressed pedestrian safety issues. The course was repeated for WisDOT staff in Spring 2005.
- DTID (now DTSD) and DTIM staff developed a 6-hour training on "Basics of Pedestrian Accommodation." The course is made available several times each year to WisDOT engineering staff.
- In Summer 2004, DSP/BOTS hired a new Pedestrian/Bicycle Safety Program Manager.
- In October 2004, the first-ever statewide Wisconsin Pedestrian/Bicycle Conference was held in Stevens Point.
- UW-TOPS Lab research staff have been involved with the development and implementation of Accessible Pedestrian Signals (APS).

Issue Area 21: Insure Safer Bicycle Travel

Related Activities:

- In 1998, DTIM produced the Wisconsin Bicycle Policy Plan, as part of the agency's long-range 2020 transportation policy planning project. The plan was published on-line: http://www.dot.wisconsin.gov/projects/state/docs/bike2020-summary.pdf
- Detailed design, planning, and program information for bicycle facilities were addressed in DTIM's Bicycle Facility Design Handbook, which was published in January 2004 and is available on-line: http://www.dot.wisconsin.gov/projects/state/docs/bike-facility.pdf
- DTID (now DTSD) and DTIM staff developed a 6-hour training on "Basics of Bicycle Accommodation." The course is made available several times each year to WisDOT engineering staff.
- In Summer 2004, DSP/BOTS hired a new Pedestrian/Bicycle Safety Program Manager.
- The first-ever statewide Wisconsin Pedestrian/Bicycle Conference was held in October 2004.

Issue Area 22: Keep Drivers Alert

Related Activities:

- WisDOT policy is to install continuous shoulder rumble strips on rural divided highways to mitigate run-off-the-road crashes.
- In the past several legislative sessions, many bills have been introduced to restrict cell phone use by drivers – but none have been passed. WisDOT staff have provided technical insight on the issue at public hearings and in informal contacts with legislators.
- In 2002, DSP troopers conducted a special data collection study on cell phone usage by drivers involved in traffic crashes, using the special studies portion of the MV4000 uniform traffic accident report form. The study results were published on-line: http://www.dot.wisconsin.gov/statepatrol/docs/cell-phone-use-in-crashes.pdf

Issue Area 23: Enhance Emergency Medical Services to Increase Survivability

Related Activities:

- Except for conducting annual inspections of ambulances and promulgating administrative rules governing ambulance equipment, WisDOT is not directly responsible for regulating/licensing EMS personnel or coordinating improvements in EMS-related services in Wisconsin. These duties are the responsibility of the Department of Health and Family Services.
- BOTS staff maintain working relationships with DHFS staff and with statewide associations that advise DHFS on issues related to EMS services.
- BOTS provides $30,000 annually in federal safety funding to train and equip first responders in rural areas.

Issue Area 24: Reduce Deer and Other Animal Crashes

Related Activities:

- For over a decade, BOTS has produced an annual monograph summarizing motor vehicle-deer collision patterns and trends.
- In 1999, DTID (now DTSD) won funding approval from the WisDOT Council on Research for a long-term evaluation of potential links between the agency's roadside vegetation management policy and motor vehicle-deer collisions. The scope of the investigation was eventually re-directed and broadened to address all issues related to motor vehicle-deer collisions. In April 2000, a regional conference on the topic was convened in Milwaukee, with

technical assistance provided by the Sand County Foundation, a private, non-profit natural resources organization.

- In late 2000, DTID (now DTSD) entered into a contractual relationship with the UW-Extension to create and support a Deer-Vehicle Crash Information Clearinghouse. Since 2002, the DVCIC has convened three annual regional seminars on deer crashes, featuring presentations by experts from across the US and Canada. In 2004, the DVCIC completed an exhaustive review of existing research literature on deer-vehicle countermeasures. A summary of the review can be found on-line at: http://www.deercrash.com DVCIC staff remain actively involved in national work groups on the topic and in 2004 became co-investigators for a new national pooled-fund study of wildlife crossings.
- WisDOT continues its role as co-sponsor of a 3-year national pooled-fund study to field-test active sensors along rural highways (in Montana and Pennsylvania) designed to detect the presence of large animals in the right-of-way and mitigate the hazard by alerting motorists.
- In Fall 2003, OPA coordinated the first-ever joint press conference with DNR and AAA-Wisconsin to alert the public to the hazards of driving during the peak season for motor vehicle-deer collisions.

Issue Area 25: Reduce Vehicle-Train Collisions

Related Activities:

- DTIM manages the agency's federal funds intended to improve railroad crossing safety. At least half of these funds must be spent on railroad crossing warning devices; the remaining portion is available for warning devices and other safety-related improvements at railroad crossings (e.g. upgraded crossing surface, channelization, separation structures, roadway relocations, closures).
- DTIM staff maintain the Railroad Crossing Information System, which includes rail crossing inventory data (track data, train crossing frequency and speed, approach roadway data, motor vehicle crossing frequency and speed). The RCIS interfaces with the Federal Railroad Administration's database, which includes crash data reported by railroad companies.
- DTIM staff are actively involved with the Wisconsin Chapter of Operation Lifesaver, Inc., a private non-profit organization dedicated to increasing public awareness of hazards associated with railroad crossings.
- 2005 Wisconsin Act 95 was signed into law by the Governor requiring railroad companies, not later than July 1, 2007, to install and maintain a yield sign below the crossbuck sign at any crossing at which the railroad is required to maintain a crossbuck sign and is not controlled by a gate, automatic signal, or stop sign.
- WisDOT provides the Office of the Commissioner of Railroads annually $2.7 million in federal funds and $1.7 million in state funds for their program.
- UW-TOPS Lab research staff have evaluated the StopGate® system for improving safety at railroad crossings. StopGate systems have been installed at two sites (Madison and Monroe).

Issue Area 26: Increase Safety Enhancements in Vehicles

Related Activities:

- None to date and none planned since vehicle design is largely a federal function.

Appendix A: Wisconsin Highway Safety Environmental Scan -- 2004

Item	Action/Strategy	Criteria: Hwy Safety Importance [0-10]	Criteria: WisDOT's Ability to Improve [0-10]	Wisconsin Data [*All data are preliminary 2003 data, unless otherwise noted*]
1	Institute Graduated Driver Licensing [*On-going emphasis area from 2001-03*]			126 deaths of persons age 16-20 [*15% of total*] 10,616 injuries [*19% of total*]
2	Insure drivers licensed / competent			107,774 convictions for Operating While Suspended, Operating After Revocation, or Operating Without Driver License [*13% of total*]
3	Sustain proficiency in older drivers			36 deaths of persons age 65-74 [*4% of total*] 2,110 injuries [*4% of total*] 80 deaths of persons age >74 [*10% of total*] 1,834 injuries [*3% of total*]
4	Curb aggressive driving			287 speed-related deaths [*34% of total*]; 11,569 injuries [*20% of total*] 289,112 convictions for "aggressive driving-related" violations [1] [*34%* of total]
5	Reduce impaired driving [*On-going emphasis area from 2001-03*]			332 alcohol-related deaths [*40% of total*] 6,424 injuries [*11% of total*] 33,870 OWI convictions in 2002
6	Keep drivers alert			133 deaths with inattentive driving as a driver factor [*16% of total*] 9,662 injuries [*17% of total*]
7	Increase driver safety awareness [*On-going emphasis area from 2001-03*]			[*No performance measure data available*]

[1] "Aggressive driving-related violations" as defined in 1999 by the WisDOT Road Rage Task Force include: All speed-related convictions (except 1-10 mph over), all signal/stop sign violations, OWI, and most of the dangerous maneuver violations (e.g. follow too close, illegal passing, reckless driving, attempt to elude).

Item	Action/Strategy	Criteria: Hwy Safety Importance [0-10]	Criteria: WisDOT's Ability to Improve [0-10]	Wisconsin Data [*All data are preliminary 2003 data, unless otherwise noted*]
8	Increase seat belt use/air bag effectiveness [*On-going emphasis area from 2001-03*]			338 unbuckled vehicle occupants killed [*71% of all passenger vehicle occupant fatalities*] 1,443 serious injuries [*36% of all passenger vehicle occupants suffering serious injuries*] 83,106 convictions for failure to wear seat belt [*10% of total*]
9	Make walking/street crossing easier			51 pedestrian deaths [6*% of total*] 1,454 injuries [*3% of total*]
10	Insure safer bicycle travel			13 bicyclist deaths [*2% of total*] 1,128 injuries [*2% of total*]
11	Improve motorcycle safety			100 motorcyclist deaths [*12% of total*] 2,407 injuries [*4% of total*]
12	Make truck travel safer			101 deaths in heavy truck crashes [*12% of total*] 2,805 injuries [*5% of total*]
13	Increase safety enhancements in vehicles			[*No performance measure data available*]
14	Reduce vehicle-train crashes			3 deaths [*0.4% of total*] 41 injuries [*0.1% of total*]
15	Keep vehicles on the roadway [*On-going emphasis area from 2001-03; combined with "Minimize consequences of leaving roadway*"]			260 deaths in crashes with fixed objects [*31% of total*] 96 were on State/Interstate highways [*37% of all F-O deaths*] 11,714 injuries [*21% of total*] 4,006 were on State/Interstate highways [*34% of all F-O injuries*] 101 deaths in overturn crashes [*12% of total*] 44 were on State/Interstate highways [*44% o all overturn deaths*] 3,116 injuries [*5% of total*] 1,547 were on State/Interstate highways [*50% of all overturn injuries*]

Item	Action/Strategy	Criteria: Hwy Safety Importance [0-10]	Criteria: WisDOT's Ability to Improve [0-10]	Wisconsin Data [*All data are preliminary 2003 data, unless otherwise noted*]
16	Minimize consequences of leaving roadway [C*ombined with "Keep vehicles on the roadway*"]			[*See Item #15*]
17	Improve design/operation of intersections [*On-going emphasis area from 2001-03*]			194 deaths in intersection crashes [*23% of total*] 97were on State/Interstate highways [*50% of all intersection deaths*] 28,114 injuries [*49% of total*] 10,233 were on State/Interstate highways [*36% of all intersection injuries*]
18	Reduce head-on and cross-median crashes			2,018 head-on passenger vehicle crashes 608 were on State/Interstate highways [*30% of all head-on passenger vehicle crashes*]
19	Design safer work zones			12 deaths in work zone crashes [*1% of total*] 7 were on State/Interstate highways [*58% of all traffic-related deaths in work zones*] 944 injuries [*2% of total*] 593 were on State/Interstate highways [*63% of all traffic-related injuries in work zones*]
20	Enhance EMS to increase survivability			Average 72-to-1 injury-to-fatality ratio [2002 data] Average 119-to-1 in the 12 most "urban" counties[2] Average 45-to-1 in the 60 most "rural" counties [*Note:The higher the I:F ratio, the higher the survivability of crashes*]
21	Improve data/decision support systems [*On-going emphasis area from 2001-03*]			[*No performance measure data available*]
22	Create more effective processes/SMS			[*No performance measure data available*]

[2] The 12 most "urban" counties that had the highest proportion of residents in 2000 living in incorporated places of 5,000 or greater were: Milwaukee, Waukesha, Kenosha, Racine, Brown, Dane, Eau Claire, Winnebago, Outagamie, LaCrosse, Ozaukee, and Rock.

Item	Action/Strategy	Criteria: Hwy Safety Importance [0-10]	Criteria: WisDOT's Ability to Improve [0-10]	Wisconsin Data [*All data are preliminary 2003 data, unless otherwise noted*]
23 *WI Only*	Drive more safely in inclement weather			176 deaths in snow/ice/slush/wet condition crashes [*21% of total*] 95 were on State/Interstate highways [*54% of all S/I/S/W deaths*] 13,455 injuries [*24% of total*] 5,891 were on State/Interstate highways [*44% of all S/I/S/W injuries*]
24 *WI Only*	Reduce deer and other animal crashes			13 deaths in deer crashes [*2% of total*] 792 injuries [*1% of total*]
25 New	Improve traffic incident management			[*No performance measure data available*]
26 New	Reduce speed-related crashes			287 speed-related deaths [*34% of total*] 115 were on State/Interstate highways [*40% of all SR deaths*] 11,569 injuries [*20% of total*] 2,279 were on STH highways [*41% of all SR injuries*] 291,326 convictions for speed-related violations [*34% of total*]
	w:\hssa\scandata04 final..doc			**840 Total Deaths 56,844 Total Injuries 131,109 Total Crashes**

Appendix B: Wisconsin Safety Partners for Top Ten Issue Areas									
	Issue Area								
	1	2	3	4	5	6&9	7	8	10
American Association of State Highway and Transportation Officials		X				X	X	X	
American Association of State Highway and Transportation Officials – Standing Committee on Highway Traffic Safety	X								
American Automobile Association and other non-profit organizations									X
AODA Assessment Agencies					X				
Businesses, Insurance Companies and Health-care Organizations									X
Circuit and Municipal Courts				X	X				
County Highway Commissioners Association		X		X		X	X	X	
County Traffic Safety Commission Representatives		X	X						
County and Municipal Law Enforcement Agencies				X	X				
County and Municipal Prosecutors				X	X				
Federal Highway Administration, Wisconsin Office	X	X	X			X	X	X	
Federal Motor Carrier Safety Administration, Wisconsin Office	X	X	X			X	X	X	
Governor's Highway Safety Association	X	X							
Hospitality Industry Statewide Associations					X				
Metropolitan Planning Organizations and Regional Planning Commissions		X	X			X	X	X	
Mothers Against Drunk Driving					X				X
Municipal Public Works/streets Department Managers				X					
National Highway Traffic Safety Administration	X	X	X			X	X	X	
Regional, County, and Local Engineers		X	X			X	X	X	
University of Wisconsin Extension		X	X			X	X	X	
University of Wisconsin Resource Center			X						
University of Wisconsin TOPS Lab		X				X	X	X	
University of Wisconsin Transportation Information Center			X						
Wisconsin Association of WoMan Highway Safety Leaders	X								
Wisconsin Chiefs of Police Association	X	X	X			X	X	X	X
Wisconsin County Highway Safety Coordinators Association	X	X				X	X	X	
Wisconsin Department of Administration		X	X			X	X	X	
Wisconsin Department of Health and Family Services		X	X			X	X	X	X
Wisconsin Department of Justice		X	X			X	X	X	
Wisconsin Department of Military Affairs			X						
Wisconsin Department of Public Instruction		X	X			X	X	X	

Appendix B: Wisconsin Safety Partners for Top Ten Issue Areas									
	Issue Area								
	1	2	3	4	5	6&9	7	8	10
Wisconsin Department of Transportation			X						
Wisconsin Department of Transportation, Bureau of Transportation Safety	X	X				X	X	X	
Wisconsin Department of Transportation, Division of State Patrol			X						
Wisconsin Information Network for Safety	X								
Wisconsin League of Municipalities		X				X	X	X	
Wisconsin Media (Broadcast Association; Newspaper Association)									X
Wisconsin Safe Community Coalitions	X								
Wisconsin Safety Belt Coalition	X								
Wisconsin Sheriffs and Deputy Sheriffs Association	X	X	X			X	X	X	X
Wisconsin Technical College System Traffic Safety School Programs					X				
Wisconsin Traffic Law Enforcement Officers Association	X		X						X
Wisconsin Troopers Association	X								X

Appendix C: List of Acronyms

AAA – American Automobile Association
AASHTO – American Association of State Highway and Transportation Officials
BHO – Bureau of Highway Operations (Wisconsin Department of Transportation)
BPD – Bureau of Project Development (Wisconsin Department of Transportation)
BOTS – Bureau of Transportation Safety (Wisconsin Department of Transportation)
BSHP – Bureau of State Highway Programs (Wisconsin Department of Transportation)
CCTV – Closed Circuit Television
CDL – Commercial Driver License
CMS – Cross Median Crashes
CMV – Commercial Motor Vehicle
COMPASS – Wisconsin Department of Transportation's asset management program
CODES – Crash Outcome Data Evaluation System
DSP – Division of State Patrol (Wisconsin Department of Transportation)
DTD – Division of Transportation Districts (now part of Division of Transportation System Development)
DTID – Division of Transportation Infrastructure Development (now part of Division of Transportation System Development)
DTIM – Division of Transportation Investment Management
DWI – Driving While Intoxicated
FDM – Facilities Development Manual
FHWA – Federal Highway Administration
GHSA – Governor's Highway Safety Association
GDL – Graduated Driver's License
HES – Hazard Elimination Safety Program
MCSAP – Motor Carrier Safety Assistance Program
MDA – Minimum Drinking Age
MONITOR – Milwaukee Area Freeways Organization network Information of Traffic for Operations and Response
MPO – Metropolitan Planning Organization
MU – Marquette University
MVMT – Million Vehicle Miles Traveled
NCHRP – National Cooperative Highway Research Program
NHTSA – National Highway Traffic Safety Administration
OPA – Office of Public Affairs (Wisconsin Department of Transportation)
OWI – Operating While Intoxicated
PCC – Possible Contributing Circumstances
RCIS – Railroad Crossing information System
ROR – Run Off the Road
SAFETEA-LU – Safe, Accountable, Flexible, Efficient Transportation Equity Act
SHSP – Strategic Highway Safety Plan
SMS – Safety Management Systems
STH – State Trunk Highway
SWITS – Southwestern Wisconsin Intelligent Transportation System
TDM – Traffic Safety Design Manual
TGM – Traffic Guidelines Manual
TIME – Traffic Incident Management Enhancement
TOC – Traffic Operations Center
TOPS – Traffic Operations and Safety Lab (University of Wisconsin – Madison)
TraCS – Traffic and Criminal Software
TRU – Traffic Response Unit
TSC – Traffic Safety Council
TSEWG – Traffic Safety Engineering Workgroup
UW – University of Wisconsin

UWM – University of Wisconsin - Milwaukee
UWTIC – University of Wisconsin Transportation Information Center
VMT – Vehicle Miles Traveled
WCHA – Wisconsin County Highway Association
WisDOT – Wisconsin Department of Transportation
WMCA – Wisconsin Motor Carriers Association
WTBA – Wisconsin Transportation Builders Association